

















# CANADIAN AGRICULTURIST

TRANSACTIONS

BOARD OF AGRICULTURE OF UPPER CANADA

A MONTHLY JOURNAL

VOLUME V

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THE

# CANADIAN AGRICULTURIST

AND

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OF THE

BOARD OF AGRICULTURE OF UPPER CANADA:

A MONTHLY JOURNAL,

DEVOTED TO

AGRICULTURE, HORTICULTURE, SCIENCE, AND DOMESTIC AND RURAL ECONOMY.

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ILLUSTRATED WITH ENGRAVINGS.

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EDITED BY

GEORGE BUCKLAND, PROFESSOR OF AGRICULTURE, &c.

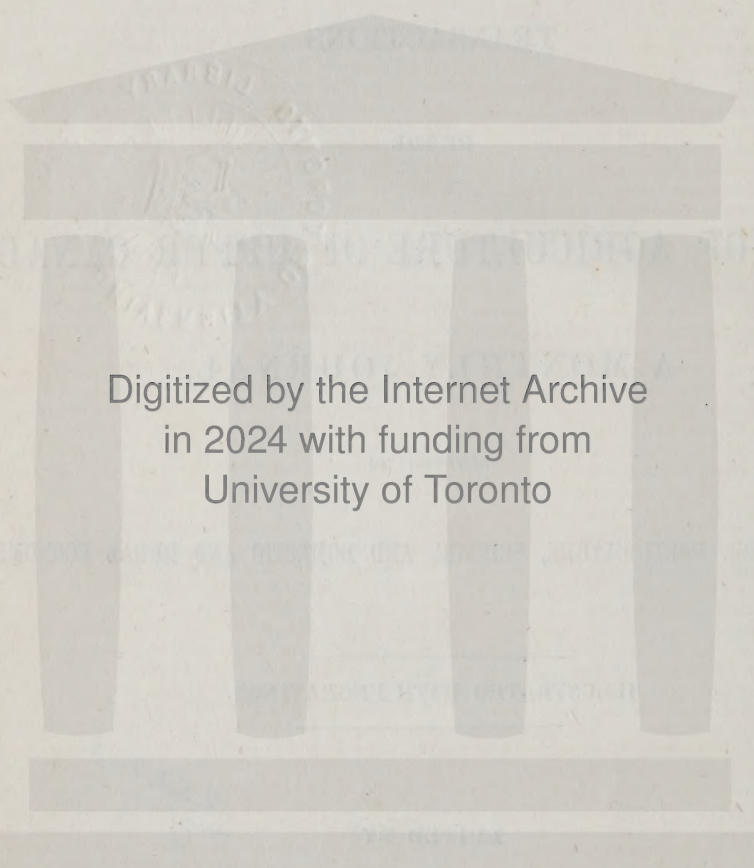
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# THE CANADIAN AGRICULTURIST

AND

## Transactions

OF THE

### BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. V.

TORONTO, JANUARY, 1853.

NO. 1.

#### FIRST ANNUAL REPORT OF THE BOARD OF AGRICULTURE OF UPPER CANADA, FOR 1851-52.

*(Printed by Order of the Legislative Assembly, First  
Session, Fourth Parliament, 16 Victoria, 1852.)*

To His Excellency the Governor General of Canada.

MAY IT PLEASE YOUR EXCELLENCY,

The Board of Agriculture of Upper Canada, established by Act 13 and 14 Vic., cap. 73, have the honor to lay before Your Excellency a brief Report of their proceedings.

The first meeting of the Board was called agreeably to statute, by the Provincial Secretary, in the City of Toronto, July 2nd, 1851, and three days were spent in deliberation. Three meetings have been subsequently held, viz: on November 4th, 1851, April 20th, 21st, 22nd, and August 14th, 1852.

The Board being constituted by statute the Council of the Agricultural Association of Upper Canada, and are thereby invested with full powers to conduct the affairs of that institution during the interval of its annual meetings. Much time has been spent in the consideration and disposal of numerous details of business, which need not be here introduced, as they would not be regarded with much interest in a Report of this nature. Condensed statements of the proceedings, taken from the Secretary's minutes, have been regularly published in the Upper Canadian Agricultural Journal.

Among the first things that engaged the attention of the Board, not immediately connected with matters arising out of the current business of the Provincial Association, was the consideration of the draft of a new and improved Agricultural Bill, which passed into a law during the last Session of Parliament—much time and consideration were bestowed upon the maturing of this measure, previous to its introduction to Parliament, not only by the Board, but also by several individuals, who possess a practical knowledge of the state and wants of the Country, and feel

a deep interest in working out their proper and adequate supply. Under the previous Act a large number of Agricultural Societies have been organized in this section of the Province, several of which continued in successful operation, and the result beyond a doubt has been a considerable improvement to the Agriculture of the Country. It was felt, however, by the Board, as well as by others whom they consulted on the subject, that there existed under the old Act a great want of system and unity of action among Agricultural Societies, with no adequate provision for giving due publicity to Reports of their proceedings. In these important respects the new statute applies an efficient remedy, and notwithstanding a few alterations in that Act, which the Board is desirous of recommending to the consideration of the Legislature, they are strongly of opinion that the main principles and features of the Law are sound and salutary.

With a view of giving publicity to their proceedings, and whatever reports or essays might be prepared under their jurisdiction, the Board found it expedient, before the close of last year, to make suitable arrangements with the Proprietor of the "Canadian Agriculturist," a monthly journal published in Toronto; which object, by these arrangements, has so far been satisfactorily attained. Much useful and interesting matter has thus been speedily brought under the notice of farmers and others, in all parts of the country. Two prize reports, one of the County of Wellington, and the other of Hastings, with several Agricultural essays—among the latter those of Messrs. Hutton and Lynch may be specially mentioned—have been published in the journal during the present year, and they cannot have failed in producing a beneficial influence on the Agricultural mind of the country. Although the arrangement with the "Canadian Agriculturist" is only for the current year, the Board confidently hopes that increased facilities for the future will be extended to the cheap publication, and wide dissemination of agricultural knowledge



and improvements, among the entire farming community of this young and rapidly advancing portion of the British dominions. The frequent periodical publication, at the lowest possible charge, of whatever is interesting and suggestive to the Agriculturists of the Province, so as to reach the remotest settler where a Post Office is established, must be regarded as an object of primary importance, and as essential to the progressive development of the Agricultural resources of the country.

The Board has much satisfaction in being able to report favorably of the steady progress of the Provincial Association, an institution which every year possesses more and more the best wishes and confidence of the country. An Annual Exhibition has now been held under its management for six years, which, taking place in different and sometimes widely-separated parts of this section of the United Province, will necessarily vary, more or less, according to local circumstances, both in the number and quality of stock and articles shown, and the amount of visitors in attendance. Still it must be apparent, even to the most superficial observer, that a *progressive advance* has been made almost from the first meeting of the Association, to the present time, when the seventh Exhibition is about to take place in this city. These Exhibitions, while they have been successful in stimulating talent, ingenuity and industry in the Province, not only in Agriculture, but, more or less, in all the industrial and civilizing arts practised among us, have also wakened up attention abroad, particularly in the mother country, to the immense resources of Canada, and its advantages as a field for emigration, and the profitable employment and investment of capital. The Parliamentary grant, voted the two last years, has enabled the Directors to increase very materially the ordinary prize list, to offer liberal premiums for new objects, and to keep the Association free from debt.

With reference to the Agricultural statute, passed last Session of Parliament, the Board would respectfully recommend a few modifications, such as the rendering of each County belonging to United Counties, "distinct and independent for Agricultural purposes under the said Act, whenever desired." Several "United Counties" have already experienced difficulty for want of independent action in each County of such union. The sum of £17 10s. required under the present Act, to be raised by Township Societies before they can legally organize and receive Parliamentary aid, might be advantageously reduced to £10, as the present amount prevents the formation of Agricultural Societies in remote and thinly peopled Townships.

Agriculture having at length been recognized as of sufficient importance to entitle it to a dis-

tinct Department in the Government of this Province, a fact most significant and encouraging to all patriotic minds, who look to the advancement of Agriculture as the permanent source of wealth and the basis of a nation's strength and prosperity, it is here most respectfully suggested, that the statute under which the Board of Agriculture is constituted, should be so far amended as to include the Minister of Agriculture and the President of the Provincial Association, for the time being, as Ex-officio members of the Board of Agriculture.

The Board have given their earnest and best attention to the important object defined by the statute under which they were appointed, 13 and 14 Vic., cap. 73., clause 12th. "Be it enacted, That it shall be the duty of the said Board to prepare as soon as practicable and present to the Legislature, a plan for establishing an Experimental or Illustrative Farm in connection with the chair of Agriculture in the University of Toronto, or in connection with the Normal School, or otherwise, as they may deem best, and to make any recommendation they may think expedient for extending Agricultural education throughout the Province."

The senate of the University of Toronto, in a statute establishing a chair of Agriculture in that seat of learning, have provided grounds for an Experimental Farm, which it is proposed shall be placed under the control of, and supported by the Board of Agriculture.

The University Statute provides, that not less than fifty acres of the Park ground shall be granted to the Board, free of charge, for a term of ten years, and if at the termination of that period, it should be deemed expedient to dissolve the connection, the University engages to take all buildings erected by the Board of brick or stone, at a price to be determined by valuation.

Soon after the appointment last spring, of the Secretary of the Board to the Chair of Agriculture, it was deemed expedient, as the University Grounds were about to be put under a course of improvement, that the Board should take some introductory steps for securing and bringing into a proper state of cultivation, that portion which had been assigned for the purposes of Experimental Agriculture, in connection with scientific, united with practical teaching in the University, by the newly appointed Professor. About 25 acres have accordingly been brought into cultivation, and the Board are of opinion that the grounds are very suitable for the purposes of Agricultural Education, and the testing of new and improved varieties of plants. But in accordance with the before mentioned clause in the Act 13 and 14 Vic., cap. 73, they have refrained from making final arrangements with the authorities of the University, till they had



submitted their plans for the consideration and approval of Your Excellency and Council, and the other branches of the Legislature.

The objects which the Board recommend in establishing an Experimental Farm on the University Ground may be thus briefly stated:— First, to afford the Professor of Agriculture a ready means of giving practical illustration and effect to his class lectures in the University,— Second, to import from abroad new and improved kinds of seeds, plants and implements, chiefly with a view of testing, by experiments carefully conducted on the farm, their adaptation to the climate, soil, wants and markets of this country, and in all cases of a favorable result, to distribute such productions on easy terms throughout the Province. An occasional importation of improved breeds of animals, the offspring being sold and distributed through the Province, would be an efficient means of advancing this very important department of husbandry, and would tend to increase materially the wealth and progress of the country. It is believed that in thus connecting the science and practice of Agriculture in their various bearings on each other, in our Provincial University, it will be made more subservient to the public good.

The Board are desirous that these fifty or sixty acres for experimental and illustrative purposes, should not be mistaken for a Model Farm, which should consist of a larger area, and which would consequently involve a much greater outlay and risk. Whether Model Farms, strictly so called, are adapted to the present wants of this young country, fairly admits of a question. But something should at once be done to connect the leading facts and principles of Agriculture with the routine of instruction given in all the schools and colleges of the Province; and if small portions of land could be set apart for such purposes, the instruction would prove far more practical and efficient.

The Board will feel much pleasure should the plan of an experimental farm on an inexpensive scale meet the approval of the Legislature, so that they may feel authorised in taking final steps for the carrying out of the same. The principal difficulty lies in the necessary outlay for the commencement. A grant of £500 would enable them to do so with every prospect of success; and it is believed that the ordinary amount of funds placed at their disposal, would after the necessary preliminary expenditure had been made, nearly or quite meet all exigencies hereafter.

Annexed is a statement of receipts and disbursements for the past year.

All which is most respectfully submitted.

E. W. THOMSON,

Chairman Board of Agriculture.

Toronto, September 10, 1852.

*Receipts and Expenditure of the Board of Agriculture of Upper Canada for the year 1851-2.*

1851.	RECEIPTS.	£	s	d.
June 10.	Balance in hand .....	227	13	0
"	Donation from Agricultural Society of Frontenac, Lennox and Addington .....	25	0	0
"	R. L. Denison, Life Mem. Sub. .....	2	10	0
"	William Gamble, do do .....	2	10	0
14.	Cash from Dinner Stewards at Niagara .....	13	18	9
Sept. 6.	Canada Company's Grant .....	25	0	0
13.	Parliamentary .....	1000	0	0
15.	County of Middlesex Ag. Soc. .....	25	0	0
23.	Northumberland do do .....	12	10	0
"	Simcoe do do .....	10	0	0
"	Carleton do do .....	25	0	0
"	No. folk do do .....	20	0	0
24.	Billa Flint, Life Mem. Sub-cr. .....	2	10	0
26.	John S. McDonald do do .....	2	10	0
27.	625 Badges sold at Brockville Exhibition .....	156	5	0
"	9,75 Single admission T'kets. .....	283	11	10
"	12 Horsemen's Tick-ets, 15s. Carriage do 17s. 6d. ....	1	12	6
"	Extra Entries .....	4	19	4
"	Cash of J. Masson .....	10	12	0
Oct. 2.	County of York Agricul. Soc. .....	30	0	0
"	County of Hastings do do .....	24	9	9
1852.				
March 4.	Treasurer of Brockville Local Committee .....	165	16	1
May 9.	do do do .....	48	6	9
	Lanark and Renfrew Agr. Soc. .....	10	0	0
		2127	15	1
1851.	DISBURSEMENTS.			
Sept. 25.	George Crawford, Treasurer of Loc 1 Committee for Fencing, Buil ings and local expenses. ..	400	0	0
"	Premiums at Brockville Exhibition .....	883	13	0
"	E. Williams, Rochester, Hire of Tents .....	50	0	0
"	Printing Premium Lists, Bidges, Cards, Ribbons, &c. ..	65	14	6
"	Clerks at Show .....	26	12	6
"	Wilson's Bill for Refreshments for Judges, &c. ....	33	10	6
1852.				
Jan. 10.	H. Y. Hind, Lectures for Distribution .....	12	2	8
June 7.	John Harland (Prize Report) ..	20	0	8
"	Wm. Hutton .....	15	0	0
"	John Lynch .....			
"	(Gold Medal) .....	5	0	0
Sept. 3.	W. McDougall, Printing Transactions, &c. ....	112	10	0
"	Board of Agriculture, 1 year's expenses as allowed by statute ..	70	0	0
"	Secretary's Salary 1 year....	100	0	0
"	Treasurer's " .....	50	0	0
"	Books for Library .....	50	0	0
"	Work on Experimental Farm, Seeds &c. ....	5	3	3
"	Sundries .....	11	14	5
		1952	1	5
	Recei pts brought down .....	2127	15	1

Balance in hand, September 10th, 1852 .....

175 13 7

R. L. DENISON, Treasurer.

E. W. THOMSON, Chairman, }  
GEO. BUCKLAND, Secretary, } Auditors.  
ALEX. SHAW, }

## BOARD OF AGRICULTURE OF UPPER CANADA.

### Officers—1853.

E W. Thompson, Esq.....	<i>Chairman</i> , Toronto.
Hon. Malcolm Cameron.....	<i>Min. Agricul.</i> , Quebec.
Hon. Adam Fergusson.....	Woodhill, Waterdown.
Henry Rutlan, Esq.....	<i>Sheriff</i> , Cobourg.
R. L. Denison, Esq.....	Toronto.
David Christie, Esq., M. P. P.	Brantford.
John Harland, Esq.....	Guelph.
Prof. Buckland.....	<i>Secretary</i> , Toronto.
Wm. Matthie, Esq.....	<i>Pres. Prov. Association</i> , Brockville.

The Office of the Board is in the building adjoining the Government House on the corner of King and Simcoe Streets—recently occupied as an office by the Rev. Dr. Ryerson, Chief Superintendent of Public Instruction.

## AGRICULTURAL ASSOCIATION OF UPPER CANADA.

### Officers—1853.

Wm. Matthie, Esq.....	<i>President</i> , Brockville.
C. P. Treadwell.....	<i>1st. Vice Pres.</i> L'Original.
D. Christie, Esq. M. P. P.	<i>2nd. Vice Pres.</i> Brantford.
R. L. Denison, Esq.....	<i>Treasurer</i> , Toronto.
Prof. Buckland.....	<i>Secretary</i> , Toronto.
Prof. Croft.....	<i>Consulting Chemist</i> , Univer- sity of Toronto.
Mr. James Fleming...	<i>Seedsman</i> , Yonge Street Nur- sery, Toronto.

The Annual Exhibition will be held in the City of Hamilton on the 4th, 5th, 6th, and 7th days of October, 1853.

### PRIZES FOR COUNTY REPORTS.

Some inquiries having been made to the Secretary respecting the conditions of the prizes offered by the Board for County Reports, it is deemed expedient to reprint from the last premium list the regulations respecting them. These premiums are open to general competition, and the time for sending in the reports should be strictly observed. The Board being desirous of getting as full and comprehensive a report of every County in Upper Canada as possible, it will be necessary to state all such particulars and details of farm practice, &c., as may be requisite to the thorough understanding of the subjects treated of.

### PREMIUMS

FOR AGRICULTURAL REPORTS OF COUNTIES IN UPPER CANADA FOR 1853. OPEN TO GENERAL COMPETITION.

For the best County Report (Wellington and Hastings excepted)		£20	0	0
2d Do. - - - - -		15	0	0
3d Do. - - - - -		10	0	0
4th Do. - - - - -		5	0	0

These Reports, in addition to the usual information required respecting the condition of Agricultural Societies within their range, should describe the various soils of the County; modes of farming; value of land; amount of tillage and average of crops; breeds of live stock; implements and machines in use; methods of preserving and applying manures; sketch of past progress, with suggestions for further improvement. The manufacturing and commercial conditions of the county should likewise be stated, together with any other facts that would illustrate its past history or present condition.

All statistical information should be condensed as much as possible, and when practicable, put into a tabulated form. The main object of each report should be to afford any intelligent stranger who might read it, a concise yet *an adequately truthful* view of the Agricultural condition and *Industrial pursuits* of the County. While all unnecessary particulars are to be avoided in the preparation of these Reports, *completeness* should as much as possible be constantly kept in view.

The Reports must be sent in to the Secretary of the Board of Agriculture, accompanied by a sealed note containing the name and address of the writer, *on or before the 1st of April, 1853*; and no report will be received after that date. Such reports as obtain premiums will become the property of the Board.

## The Agriculturist.

TORONTO, JANUARY, 1853.

### NOTICE TO SUBSCRIBERS.

We send this number of the *Agriculturist* to all single Subscribers on last year's list, with a few numbers to each Society. Those who intend continuing the work will confer a favour by intimating their wishes to us immediately, that we may be enabled to decide how many to print. The remaining numbers will not be sent unless specially ordered. It is not impossible that the Board of Agriculture may have more matter than can be compressed into twelve numbers, and if extra numbers should be issued, the price will not be increased to regular Subscribers. We expect to have arrangements completed early in spring for illustrating more fully, and otherwise improving this Journal.

The *Agriculturist* will hereafter pass through the Post Office *free*, which will, we trust, operate as an additional inducement to Societies as well as individuals to order the paper.



THE NEW YEAR.

The year 1853 commences auspiciously for Canada. Most of the difficulties that were so keenly and extensively felt not even half a dozen years ago, are now either wholly overcome, or are in a certain and speedy way of removal. The labours of the farmer, the last season, were crowned with ample crops, and the price of almost every article that he raises has now reached a satisfactory and remunerating point, with the cheering prospect that this state of things, being the result of a steady and healthy progress, will be continued. Nor is it the Agricultural interest alone that is looking up, for in a country like this, whose mainstay is agriculture, whenever *that* is advancing and prosperous, all other interests, which are more or less dependent on or connected with it, must necessarily participate in the onward movement. Whether, therefore, we look at the state of our agriculture or commerce, or to that of our revenue and credit, and the steady progress which the country is making, as a whole, socially and physically, there appears on all sides, the most satisfactory reasons for contentment, thankfulness and perseverance.

Canada is only just beginning to be subjected to the powerful and beneficent influences of the great civilizer of modern times—the *Railway*! It is true that, hitherto, such have been the advantages afforded by our unparalleled lakes and rivers, that railways have not been such a desideratum as most other countries have experienced naturally less favourably situated. But Canada is rapidly outgrowing the means of transit furnished her by nature, liberal though they be, and a system of railways, already extensively commenced, will in a few years connect the extreme eastern and western points of this immense territory—probably the shores of both oceans—and thus facilitate the settlement of a yet almost unbroken and interminable wilderness with a free, industrious, and ever advancing population. The virgin soil of these regions is unsurpassed in natural fertility by any portion of the temperate zone, while their forests of gigantic growth, and mineral resources, only wait the genius and industry of men to convert them into inexhaus-

tible sources of wealth and enjoyment. If Canada possess no gold equal to some of her younger sisters in the southern hemisphere, she has unquestionably in larger abundance the material for building up and maintaining a strong and vigorous community;—an almost boundless area with a fertile soil; forests abounding in the most valuable varieties of timber; unequalled water advantages; a bracing climate; the means of instruction, both mental and religious, steadily advancing; and as free municipal and political institutions as are to be found on the face of the whole earth. With these great advantages, what is to hinder the continuous increase of this important section of England's magnificent Empire in wealth and knowledge, in virtue and happiness? Only let us continue to cultivate sedulously the agricultural, mechanical and manufacturing arts;—diffusing far and wide the blessings of useful knowledge, and the spirit of a sound and elevating literature; evincing mutual respect and forbearance towards all classes of the community; maintaining the internal state of tranquillity which now happily prevails;—let each strive earnestly for the attainment and perfection of these objects, in a spirit of moderation and charity, and all will be well; the country will, in the highest sense of the word, continue prosperous, and under the blessing of Providence, will go on increasing in all those qualities which render a people wise, virtuous and happy.

We have been led into this train of thought by the advent of a new year. The pages of this journal will always be open to such as may wish to communicate information on any of the industrial pursuits, which obtain among us; particularly the one to which this periodical is more especially devoted. Most farmers could easily contribute something useful to the common fund of knowledge, if they would. We hope that the number of our correspondents and subscribers will this year receive such an augmentation, as will enable us not only to sustain the *Agriculturist*, but likewise to improve its character, and thereby increase its usefulness. To our subscribers, one and all, we beg to express our wish of a "*happy new year*."



## THE NEW AGRICULTURAL STATUTE.

We published this Act entire in the December number, and all who have the management of Agricultural Societies should read it carefully. Societies legally formed, are not required to re-organize under the new statute. We wish to call the attention of office-bearers particularly to those clauses which require Township Societies to hold their annual meetings in the month of *January*, and to send in their reports to the Secretary of their respective *County* Societies, in time for the annual meeting of the latter in *February*. The whole of the reports are to be sent in to the Board of Agriculture on or before *the 1st of April next*. It is of the greatest importance that Societies should prepare their Reports with care, giving pretty full details on all points of interest or moment as it will be on these materials that the Board must mainly depend for making up their Transactions.

## THE AGRICULTURAL CENSUS.

We have received the details of the Agricultural census as printed by the Board of Registration and Statistics. These details are given with respect to Counties only, and except in the case of the new county of Bruce, appear to have been collected with a good deal of care, and it may be presumed with accuracy. We published in a former number the "totals" under the different heads for both sections of the Province. We need not repeat these totals, but it may be interesting to compare the productions of the several Counties. The great staple of Upper Canada is wheat, which for the year 1851, amounted to the enormous quantity of *twelve millions six hundred and ninety-two thousand eight hundred and fifty-two bushels* (12,692,852) worth at 3s 9d per bushel, the respectable sum of \$9,519,639. It is extremely probable that this is not all the growth of 1851, for a large portion of the previous year's crop was still in first hands, and would be very likely to get into the returns, unless special care was taken to prevent it.

The following is the return of the number of acres under cultivation, the number of acres under wheat, and the number of bushels grown in 1851 in each of the Counties in Upper Canada.

Counties.	Under Cultivation.	Acres of wheat.	Produce.—Bushels.
Addington .....	82657	9142	78268
Brant .....	117417	32858	625741
Bruce .....	2272	489	9796
Carleton .....	91094	14404	224451
Durham .....	146312	31339	617589
Dundas .....	43645	7308	111979
Elgin .....	110159	24168	413435
Essex .....	46460	9243	127769
Frontenac .....	81758	8451	94132
Glengary .....	68018	10007	142455
Grey .....	31401	9409	121379
Grenville .....	69872	8891	119300
Haldimand .....	79279	21942	376475
Halton .....	109496	26320	491517
Hastings .....	129950	26681	268003
Huron .....	54976	15400	214738
Kent .....	64260	16493	298338
Lambton .....	34497	6721	92057
Lanark .....	120073	13930	179378
Leeds .....	120923	20666	238953
Lennox .....	44065	5046	30281
Lincoln .....	82424	22794	335487
Middlesex .....	136947	29078	453596
Northumberland .....	146099	28502	431421
Norfolk .....	94367	22217	353636
Ontario .....	143882	37523	665798
Oxford .....	135232	32863	611251
Peel .....	128642	37104	598975
Perth .....	58116	15081	204523
Peterboro .....	69574	15596	253510
Prescott .....	32920	3569	44891
Prince Edward .....	121022	22354	192408
Renfrew .....	36890	4676	64141
Russell .....	6025	813	9814
Simcoe .....	109192	26762	432421
Stormont .....	44951	6710	97429
Victoria .....	56878	17969	263301
Waterloo .....	13806	20810	518659
Wellington .....	119081	28126	433659
Welland .....	56467	12795	423508
Wentworth .....	125539	27718	432683
York .....	212276	50147	991608
Total .....	3697724	782115	12692852

Several of the fashionables of St. Petersburg lately conceived the idea of smoking tea instead of tobacco, and at all the tobacco shops in that capital, cigarettes made of it may be purchased.

The grape harvest of Europe the past season, seems to have been almost a total failure. Those in Madeira have been entirely blasted and a disease as singular as it is universal, has affected the vine in Italy, Greece, &c.

The price of Wheat rose in Galt on Wednesday morning to 3s. 9d. cy. or 6s York, per bushel, and a very considerable quantity is being sent in to our mills. Flour has risen to 11s. 3d. per 100 pounds. The quantity of pork sent in last week has been far beyond all previous experience, 19 tons having been taken in by one house in Galt in little over 24 hours!—and probably most of the dealers in Galt made a like amount of purchases at the same time. The price varies, for merchantable pork, from \$4½ to \$6½ per 100 pounds. Poultry is plenty and cheap, and there is some, but not much, venison offering for sale. The farmers of Dumfries may well say they have seldom seen a more comfortable Christmas.—*Galt Reporter*.

EAST OXFORD FARMERS' ASSOCIATION.

*To the Editor of the Canadian Agriculturist.*

SIR,—I have been requested as the Secretary of this Association to transmit the report of the proceedings of the last meeting for insertion in your journal. The following address was delivered by the President, Geo. Alexander, Esq., on opening the meeting:—

"He felt that it was not necessary that he should again dwell upon the benefits likely to result from the practical working of this Association, but would at once proceed to the consideration of the first subject named for discussion at this meeting. The prefatory remarks which he proposed making would doubtless be very imperfect, and open to criticism. He (Mr. Alexander,) would desire to say that he felt deeply his inability to lead a movement of this interesting and important character, and must beg of them to look upon him as coming here more for the purpose of deriving benefit himself, of profiting by their experience, than with any idea of his being able to impart information on agricultural matters, to them, the practical farmers of the land. He might occasionally venture to quote from works of scientific research, facts which have been given as the result of investigation and experiment; but such were not always to be relied upon, and it would be well for them to observe caution in adopting any theory of husbandry which was not fully borne out by their own experience and judgment. It is designed by public discussion to endeavour to explode everything which is erroneous and unprofitable in our present system, and to introduce whatever is found to be an improvement.

"The stock which is raised upon the farm constitutes in all countries a very valuable part of the produce. It is a never-failing source of return and wealth to the farmer, if due care and attention is paid to the feeding and general management of the same. It is therefore, essential that they should possess the fullest information upon this subject. It is gratifying to observe the general desire now manifested to obtain the improved breeds of every kind of stock. This augurs much for the future prosperity of the country; for as the farmers succeed in getting better stock, so will they take the more interest in affording them the proper care and shelter. If he were asked what constituted the most pleasing landscape to the farmer, he would reply: to see grazing upon our pastures thorough bred Leicesters and South Downs (and the first cross between these produce splendid stock.) If the County Societies are worked as they may be, with energy and judgment, and with the great assistance received annually from the Government, many of us may live to see introduced into this district an abundance of the noble stock of the Devon, Durham, and the Hereford. The last named are gaining in public estimation. But whatever stock the farmer possesses they must be properly cared for. While regular feeding is enjoined, we cannot dwell too much on the necessity for proper shelter from the cutting north-west winds, and deep snow storms of our severe winter.

"He (Mr. Alexander) would desire to comment upon a very prevailing but erroneous impression which exists with regard to young stock, that it is sufficient if they can only be got through the winter in any way; bestowing the best hay, grain and shelter upon the working and fattening animals. These last are not generally better cared for than they should be, while the young stock is much neglected,

and great loss and injury is sustained in this respect. It is a reasonable to suppose that while a colt is growing, its muscles developing, and its bones forming, that the frame and physical constitution of the animal must depend upon the feeding and shelter during this stage of development. How many horses do we see that have no bottom or constitution? How much degenerate and miserable looking stock of every kind are to be found in every country? The same remarks are applicable to man. Bring up a child with proper care and food, until the constitution is properly formed and he will have health; when he has attained to manhood, he will be better able to sustain hardship and toil. This principle pervades the whole of nature; an illustration may be given from the vegetable kingdom. Fruit trees planted and grown in well cultivated soil acquire a more healthy and rapid growth, and attain to a much greater size than those which are neglected; this extraordinary difference of result has probably been experienced by all present in the management of their orchards.

"He (Mr. Alexander) knew that he would be met at all hands with the reply that our winters are so long and severe, that the farmers generally cannot do proper justice to all their stock. This brought him to the consideration of the manner in which the fodder generally should be secured, and to the subject of the economy of feeding; but before coming to these points, he would again dwell on the great advantages of having the farm yard facing to the south, and so constructed to afford shelter from the driving storms and cutting winds; for it is an incontrovertible fact, that less nourishment is necessary where the proper warmth of the body is kept up. Numberless experiments have been tried to establish this point, one of which he would quote from Prof. Johnson's lectures: twenty sheep were kept in the open field, and twenty others of nearly equal weight kept under a comfortable shed, they were fed alike for the three winter months, having each per day  $\frac{1}{2}$  lb linseed cake  $\frac{1}{2}$  lb barley, with a little hay and salt, and as many turnips as they wished to eat. The sheep in the field consumed all the barley and oilcake and about 19 lbs of turnips each per day, so long as the trial lasted, and increased in the whole 512 lbs; those under the shed consumed at first as much food as the others, but after the third week they ate 2 lbs each of turnips less per day, and in the ninth week 2 lbs less again, or only 15 lbs per day. Of the linseed cake they also ate about  $\frac{1}{3}$ rd less than the other lot, and yet increased in weight 790 lbs or 278 lbs more than the others; this too with nearly 200 lbs less of oilcake and about 2 tons less of turnips."

"The time and manner of securing the different kinds of fodder, are very material points to be considered. After grass has attained to the full size and height, it loses by delay in cutting, and becomes soon transformed into dry, indigestible, woody fibre. The same occurs to the straw of the different grains and corn stalks. Most good farmers coincide respecting the early cutting of all the grains on account of the great additional value of the straw as an article of fodder. Some writers press the early cutting of the grains for other reasons. Norton maintains that wheat cut many days before it is ripe, not only weighs heavier, but measures more, that it is better in quality producing a larger proportion of fine flour to the bushel. He (Mr. Alexander) should like to hear the opinions of those present upon this important point. We had to determine the earliest moment at which it is safe to harvest the different crops for the preservation of the grain. The great value of pease straw cut early, in wintering sheep was well known; and he was of opinion that Indian Corn might be grown more extensively with advantage in this Western



country, as a grain remarkable for its nourishing properties, while the corn stalks when cut as above and properly cured, are held by many farmers to be equal to the best hay. Norton says, "if put into small stacks in the field with the butts well out, so as to let the air in, and the tops tied together; they dry green, sweet, and tender, so that all stock relish them highly." The farmer having secured his fodder in good order, the only remaining point to be dwelt upon, was the frugal management of the same, the turning it to the best account when there was a large stock to winter. Regularity of feeding was a great matter, and taking care that they had access to water. He was surprised that the straw-cutter was not more generally in use, it enables the farmer to feed his straw to greater advantage mixed with hay. Cut stiff, wet previous to feeding, with a small quantity of Indian meal, or ground oats, or bran sprinkled over it, was found to be very advantageous for young stock, milch cows and fattening animals. Upon a large farm, there might be a horse-power connected with the straw-cutter, which would render it a very easy matter to cut for a large quantity of stock. He saw at the Provincial Show in Toronto, a single horse-power in connection with a saw for cutting firewood; such might be used for different purposes, and effect a very great saving of labour. But he (Mr. Alexander) feeling that he had already trespassed too long on their attention, would not make any further remarks on the present occasion."

Mr. ELLISON, the Superintendent of Blandford, who generally carries off some of the prizes at the County Show expressed his views at considerable length, respecting the care and management of stock.

Mr. LEMON, (Councillor of East Oxford,) explained the system of feeding practised in two of the Eastern States of the Union, dwelling particularly upon the value of Indian Corn; but was afraid it could not be grown in this Township with the same certainty of success as in other parts where he had been residing. It was probable, however, that some of the kinds might be selected to prove a more certain crop than that generally grown here. Mr. Bats of Norwich bore testimony to the great value of corn-stalks when properly cured; gave his method of stacking them; admitted the great importance of shelter to stock; giving different ideas of the construction of farm buildings.

Mr. GARBUTT gave a calculation to the meeting of the expense at which turnips could be raised; he thought that with the aid of a horse hoe and cultivator, this crop would remunerate the farmer for his labour. Turnips would be a great aid in wintering every kind of stock, while the cultivation required would be beneficial to the land.

Mr. HENRY PEERS (Vice President) said that in his system, he divided his stock into three different classes, and fully explained his views on the principles of feeding, which were highly approved of by all present.

Mr. Hart, Mr. Allan, and others, replied to the different speakers. Mr. Allan bore testimony to the great advantages of the straw-cutter, which he had formerly been accustomed to. He approved of the idea of connecting a horse-power with the straw cutter. Such would effect a great saving of labour to every farmer who could afford to purchase one. The subject of the comparative value of different kinds of produce having been mooted, the President stated that according to a table arranged by Bousineault, 10 lbs of hay gave as much nourishment as either 67 lbs of turnips, 38 lbs of carrots, 31 lbs of potatoes, 54 lbs of field beets, 6 4-5 lbs of oats, or 33 lbs of oat straw.

The discussion was more warmly supported towards the end, when the diffidence which was at first man-

ifested began to disappear; and I would remark that if some of the members would upon future occasions, come with full notes of their different views, a much greater amount of valuable knowledge might be published.

The PRESIDENT, before adjourning, expressed the hope that all would become members of the County Society. It was much to be regretted that it had been hitherto so indifferently supported. He would with all deference say, that it reflected upon a county of such importance as this, that there was not more interest taken in this useful institution. There have been various reasons assigned and excuses alleged, but none of those constituted grounds for not joining the Society, because if those parties had any improvements to suggest, respecting the arrangements or the manner in which it is conducted, the proper plan was for them to become members, and use their influence to amend whatever they thought defective. The sum of £250 is annually obtained from the Government a large part of which is at their disposal; and he would rejoice to see a large accession of members at the next annual meeting. He would also recommend to their notice the *Canadian Agriculturist* a periodical edited with much ability, by Mr. Buckland, the Secretary of the Board of Agriculture. It was issued monthly and always contained a great variety of matter deeply interesting to the farmer. Twenty five persons clubbing together could procure it for half-a-dollar each per annum.

The only remark he would make at present was, that he hoped to see more of the young men at these meetings; that although they might not take part in the discussions, they would be acquiring knowledge which would benefit them in their daily pursuits. Our hopes are in the growing intelligence of those "springing up around us."

The next meeting is appointed to be held in the Town Hall, on Thursday, the 20th January next, at 2 o'clock, P. M.

SUBJECTS FOR DISCUSSION.—1. The kinds of Stock which are best suited to this climate and market, and which it is most advantageous for the farmer to raise. 2. The character and weight of horses which should be introduced by our Societies. 3. The individual merits of the different breeds of sheep, cattle, and pigs, as adapted to this country. 4. The selection of Seed, embracing the consideration of every kind of Produce—wheat, (spring and fall); oats, barley, peas, potatoes, corn, and turnips.

The members of the Committee to meet punctually at one o'clock P. M.

Yours, &c.,  
L. C. TEEPLE.  
Secretary.

Woodstock, December, 1852.

SHORT-HORN PRIZE HEIFERS.—THE PROPERTY OF S. P. CHAPMAN, MOUNT PLEASANT FARM, CLOCKVILLE, MADISON CO., N. Y.

G. BUCKLAND, Esq.

DEAR SIR,—These heifers (portraits of which I herewith send you) were exhibited at the Show of the New York State Agricultural Society, held at Rochester in 1851, and, in connection with three of my cows, Ruby, Charlotte, and Daisy 3d, won the first prize collectively, as "the three best Short-horn Heifers under three years of age, and the three best Short-horn Cows over three years of age, owned by one person."

These heifers were again exhibited at our late State Fair, held at Utica in September last.



1. DUCHESS.

2. MILPA 4th.

3. RUBY 2nd.





Duchess here won the second prize for Short-horn Cows, being herself *but three years old, and competing with aged cows*. Ruby 2d won the first prize for two-year Short-horn Heifers, and Hilpa 4th the first prize for yearlings.

At the Show of the Madison Co. Agricultural Society, held in September last, these heifers won respectively the same prizes as at the State Fair at Utica. At this Show my short-horn cow Ruby won the first-prize over Duchess. Ruby was a first premium "milch cow" at our State Fair in 1850. Charlotte was a first prize short-horn cow at our State Fair in 1849, and won a "Certificate," which is a higher prize, in 1850. Halton, bred by Geo. Vail, Esq., and formerly owned by the Hon. Adam Fergusson, also won the first prize as the best short-horn bull at our last State Fair. The *second* premium bull sold for \$500.

**PEDIGREES.**—Duchess, white, bred by S. P. Chapman: calved 25th June, 1849: got by the imported Bates bull, Duke of Wellington, 55 [3654], bred by Thomas Bates, Esq., Kirkleavington, Yorkshire, England; dam [Matilda] by White Jacket [5647]; g. d. [Hart] bred by and imported by the late Thos. Nollis, formerly of Blythe, Yorkshire, England. Duchess is an excellent milker.

Ruby 2d, roan, bred by S. P. Chapman calved 27th May, 1850; got by Buena Vista [B. V. by the Bates prize bull Meteor, 104—his dam, Queen 2d, bred by Chas. H. Hall, &c.]; dam [Ruby] by the Bates bull Symmetry, 166; g. d. [Willey 3d] by Mars; gr. g. d. [Young Willey] by York; gr. gr. g. d. [Old Willey] imported. See *Am. Hd. Book*, page 238.

Ruby was awarded the first prize at the Show of the New York State Agricultural Society in 1850, in class of "milch cows." She gave, in that season, during a period of eighty successive days, *over four thousand pounds of milk, her feed grass only*. 19 lbs. of her milk gave one of butter.

Hilpa 4th, roan, bred by Geo. Vail, Esq., of Troy, N. Y.: calved 9th April, 1851: got by the imported Bates bull Duke of Wellington, 55, [3654]; dam, the imported Bates cow [Hilpa] by the Duchess—Bates bull Cleveland lad [3407]; g. d. [Hawkey] by Red Rose—bull [2493]; gr. g. d. [Hart] by Rex [1375]; gr. gr. g. d. bred by Mr. Richardson, of Hart, England, from an old and celebrated milking tribe of short horns. I paid for this heifer, at the age of 2½ months, \$300.

I am, Sir,

Truly yours, &c.,

S. P. CHAPMAN.

Clockville, New York, Nov. 16, 1852.

#### REMARKS.

We have much pleasure in presenting our readers with a well-executed cut of some fine specimens of Mr. Chapman's stock; although the engraving of Ruby, we are informed, does not do that splendid young animal full justice, and Mr. Chapman intends having another sketch

taken of her. She has beaten two imported heifers and many other fine animals at public shows, and her owner informs us that he would not accept \$1000 for her.

The celebrated bull "HALTON," formerly owned by the Hon. Adam Fergusson, who sold him to Mr. Chapman, won the first prize at the last New York State Fair at Utica, where he could readily have been sold for \$1,000, but so high is the estimation in which he is held by his present owner that hardly any price would tempt him to sell him. Mr. Chapman says that he is the finest bull he ever saw. We just mention these few facts, not merely on the authority of Mr. Chapman, for several gentlemen, both here and in the States, whose judgment and impartiality we are bound to respect, have confirmed to us more than is before stated as to the many excellencies of Mr. Chapman's herd. Mr. Chapman intimates his intention of coming to our next Provincial Exhibition at Hamilton, where we shall be most happy to see him, with as many specimens of his cattle as he can manage to bring. We trust that the "water" will form no impassable impediment.—EDITOR.

#### AGRICULTURE AND COAL FIELDS OF OHIO VIEWED IN REFERENCE TO CANADA.

*To the Editor of the Canadian Agriculturist:*

SIR,—I have lately returned from a tour of inspection, chiefly agricultural and mineral, in Ohio and the adjoining States; and having promised to contribute a brief review of facts, which may be considered of public interest, I avail myself of the first leisure to do so.

It must be conceded that Ohio contains some fine agricultural sections, and the splendour and general arrangements of many of the Farm Buildings, indicate the wealth of the proprietors; but they do not appear to have effected much in the way of drainage which in many sections is very much needed, and doubtless is the cause of sickness so prevalent in many parts of this fine State. Exactly similar results were experienced in some of the midland counties of England some years ago, before the drainages were effected, and doubtless from similar causes. When viewing the country as a practical Farmer, it did not appear that they are in anything superior to us Canadians, they have indeed a very fine breed of horses and very large and fine cattle, chiefly crosses of the Durham and Devon; but as sheep farmers, any one knowing his business as a flock master, would say—"they do not appear to understand it," but very few good sheep, in fact, were to be seen anywhere. In passing through any new county a true index may be found in the butchers' stalls on market-days, and in this respect they are inferior to Toronto or Hamilton, both in quality and price; their best samples of wheat



are about the same quality as our own, but in the growth of Indian Corn an exception may be claimed in their favor, and their extensive system of hog fattening will pay handsome profits this year. I have much pleasure in expressing my acknowledgements of the general kindness and attention of the American farmers and people, particularly from Dr. Newbury of Cleveland, and his venerable father, one of the proprietors in the coal region, and shall be happy to reciprocate their hospitality. But for all practical purposes as an Agriculturist, I must say that I returned to my own location on the Grand River with entire satisfaction.

In examining the coal regions of Ohio it is interesting to find the similarities to some of the English mines, particularly the Forest of Dean Coal Works in Gloucestershire, the general features of the mines, the mode of working by inclined planes, or orbit levels, and other facts in which there exists a combination of circumstances to enable the proprietors to secure the extensive transit afforded by the adjoining lakes in turning to profitable account these inexhaustible resources of fuel. With regard to the probability of finding coals in Western Canada, as mentioned in a former communication, there appears to be many corresponding features with the coal field in Michigan, and these connected with the N. E. and S. W. strike through Western Canada, warrant the conclusion that the measures will be met with in Western Canada as the progress of clearing goes on; but the discovery of coal measures in Canada becomes a matter of but little importance at present, because the facilities for working the Ohio mines by the cheap mode before described, with the advantages of a canal and railroad to Cleveland, will enable the proprietors to deliver coals anywhere on the shores of the adjacent Lakes cheaper than could be done by the expensive machinery required for perpendicular shafts.

Another fact which has come under my notice is the expectation of finding Potters' clay of good quality, a material much desired, and I beg to recommend this subject to the attention of the Provincial Geologist. There is in Brantford a large manufactory of brown pottery, in which many articles of considerable elegance are exhibited, and prove that only a finer description of material is needed to enable the proprietors to equal some of the more inferior, or second-class Staffordshire ware; the manufactories at Brantford have also hitherto labored under the disadvantage of getting all their clay from the New England States, through the defective navigation of the Grand River, in which their boats have grounded and finally sunk. The best material for the finest description of Staffordshire ware in England is obtained from the mines in Dorsetshire; the late Mr. Wedgwood himself took great pains in selecting the best veins; could Potters' Clay of somewhat similar quality be found near the frontage of our great Lakes, (which appears very probable) it is not unreasonable to predict that our own manufactories would soon render it necessary to import such large quantities of this brittle material. I have only to add on this subject that having many years ago been associated with Mr. John Smith, the younger brother of the author of the first Geological map of England, in a survey and subsequent examination by boring for Potters' Clay and other minerals, on an extensive tract in the south of England, I would readily afford my gratuitous assistance in any research of the kind alluded to; the locations to which particular reference has been made, is under the silicious sands and inferior clay near the shores of Lake Erie; they more closely represent the Dorsetshire clay field than any other location I have seen on this side the Atlantic.

Having in former communications contributed some papers on Geological developments connected with Agriculture, I avail myself of this opportunity to state a few remarks on the last report of the Provincial Geologist recently received. It is decidedly the best of the series, but it is still defective and unintelligible to general readers from the absence of a Glossary or explanation of the numerous scientific terms, many of which are not to be found in Lyell, or other standard authors, but has ever been by all considered a necessary appendage. It has been further remarked that in works of this kind, "Practical utility should be the object kept in view, rather than a display of scientific knowledge." In the last Report, pages 28 and 29, we are informed of the discovery of Phosphoric Lime Stone, which is thought will greatly benefit the Agriculturists when burnt into lime. With reference to this suggestion I beg to state that, in several experiments I have never found any beneficial effect whatever from phosphorus, as such, in any shape. An experiment in a quantity of decaying wood, luminously phosphorescent, produced no perceptible effect on vegetation. Another experiment of decaying Fish also luminously phosphorescent produced luxuriant vegetation, in this case however the effect of the ammonia generated in decomposition produced a saponaceous compound, soluble in water, which explains its effect on vegetation. I beg also to suggest with reference to lime burning, that the same degree of heat necessary to drive off the Carbonic Acid, will also destroy every vestige of phosphorus. The black or dark colour lime stone requires the greatest degree of heat or longer continuance of fire to destroy the excess of carbon, from which the colour is derived.

Since writing the foregoing I have observed in Mr. Murray's Report page 30 a description of certain Bituminous formations in Enniskillen, County of Kent. Now this is an interesting fact, as it proves the existence to a certain extent, of mineral masses of that material in Western Canada,—trace a line on the map N. E. and S. W. as before described as the strike, it will be seen that it passes near the place referred to, it is indeed the very line which I had chalked out for my own exploration and amusement next summer. With reference to the fact stated in Mr. Murray's report, I have known similar cases in Europe where veins have ignited by the decomposition of iron pyrites, and distillation carried on until the fire has appeared at the outcrop.

I am, Sir,  
Your obedient servant,  
HENRY MOYLE.

Sheep Walk near Brantford,  
December 12, 1852. }

#### EXPERIMENTS WITH POTATOES—AUSTRALIAN GRAIN, &c.

Wilmot, Nov. 26, 1852.

To the Editor of the Canadian Agriculturist:—

DEAR SIR,—Having reason to believe that potatoes, planted in the fall, in favorable situations, would be successful, I have this year planted a bushel,—they have been mulched, [a Yankee term], and I propose also mulching one-half an acre in the spring; the result, as well as some accounts of the produce of some Australian wheat, barley, and oats, presented me by Frederick Widder, Esq., I will communicate to you next year.

Knowing the great interest taken by the farming community in our Provincial Exhibition, any sugges-

tion tending to its usefulness would probably be considered; I would therefore recommend that Diplomas be granted to the *Breeders* of Stock, to the proprietors of which are awarded Premiums. In England it is usual to give Medals. It is, in my opinion, highly important, for various reasons, that the name and residence of the Breeder should be made public, whether residing in England, the United States, or Canada.

I perceive there is a long letter from Mr. Parsons in the last number of the *Agriculturist*; I shall make no reply to it, further than to observe, that as he has taken some trouble to advertise my Devons, I have none to dispose of; on the contrary, I am now, and have been, a purchaser for the last year. Your readers will, I doubt not, give fully as much credence to the reports of the *Colonist* and *Genesee Farmer*, as to one emanating from Mr. Henry Parsons. Should any of your subscribers trouble themselves to get through Mr. Parsons's rodomontade, I beg to say it is intended for an answer to a short communication of mine in the August number of the *Agriculturist*, the truthfulness of which, in every respect, I am now more than ever convinced of.

I am, dear Sir,  
Yours truly,  
DANIEL TYE.

[We shall be glad to be made acquainted with the result of Mr. Tye's experiments with Potatoes and Australian grain as soon as obtained. Any suggestions relative to the improvement of our Provincial Exhibitions, from whomsoever they come will always be thankfully received, and we doubt not will be carefully considered by the Board of Managers. In this way a progressive advancement towards perfection will be ensured.—EDITOR.]

#### LETTER FROM MR. SOTHAM.

RIFFARD. Livingston Co., }  
N. Y. Nov. 29, 1852. }

MR. EDITOR,—I see by your report, that the Hereford Cow and heifer owned by Baron de Longueuil were deemed worthy of first and second premiums. I was in doubt whether your judges would allow it from their *outward appearance*. These were instances of unsuccessful "in and in" breeding—own brother and sister—son and dam. Ranty 2nd was offspring of the latter. I purchased their dam in England of Mr. W. Hewer, knowing her to be closely bred, and continued to breed "in and in" from this family for twelve years. I am now satisfied with the result, having bred three blind calves. The cow and heifer above mentioned degenerated in symmetry, and appeared to lose constitution, and did not grow as they ought to do. I sold the Baron a yearling bull—"Climax"—bred from the stock of John Price, Esq. My brother purchased Cynthia, his dam, and her bull calf, now two years old, for me in 1850, of Geo. Drake, Esq., Manor farm, Essex, England. Climax was calved in America the following spring, and is as well bred as anything alive belonging to the Pigeon family on one side, and Woodlap, (the well-known prize cow at Southampton in 1844) on the other. Although the cow and heifer named above are too closely bred, there is as good blood in their veins as ever run in an animal

of any breed. I make the above statement for your readers to observe at some future show what progeny the Baron will be able to exhibit from them, the bull being no relation. It may be a good "*practical*" lesson to some of your readers. I have had a little experience in high and low priced cattle. I gave 70 guineas for a Hereford Cow because she was highly recommended to me by her breeder. I bought another of him at the same time, equally well bred for £22, which proved the best cow, and so did her whole family. This, with many other similar instances, convinced me that a *well bred cow*, a little deficient in symmetry, retaining her quality, will breed superior animals, if the bull is judiciously selected. Hence the importance of a well authenticated pedigree. In my opinion the price is no criterion of goodness. Some men have more money than others, and a strong desire to run them up to high prices, for the purpose of notoriety; and think when they have so purchased their credit is established. Then pay well to get portraits of many of their animals in all the papers they can, with too many "strait lines" in the engravings. However erroneous their judgment, they are great breeders at once in their own estimation. My opinion is that all who pay over £150 for a beast is to be charged to his "fancy." Any "Coxcomb" can procure the best who has money enough, but I know such a person cannot perpetuate them without the assistance of others. All animals vary in price according to the spirit of the purchaser. For instance: Mr. Vail of Troy purchased the short horn cow "Skylark" at Mr. Allen's sale for \$100, took her to his own herd, kept her two months, improved her condition, and sold her again at his sale, subject to the same bidders, and many others more spirited. She was knocked down by the same auctioneer to Mr. Parsons for \$75. (See *Wool Grower*, the report of each sale which I send you.) Probably the latter gentleman can give us some reason why this cow depreciated in value 25 per cent in so short a time, and under such circumstances.

And now that I have him in view, I will reply to some remarks in his letter of the 23rd of April. I think it is an important item for your readers (many of whom I hold in high estimation, and in whose judgment I have the highest confidence,) to know the age of Mr. P. when "he grazed thousands of Devons, and hundreds of Herefords, as well as Scotch, Welch, and sometimes Irish." He does not say whether it was "thousands or hundreds" of S. H. but I presume he would have us to believe they "exceeded all others!" Now, Mr. Editor, if I mistake not, Mr. P. was in Ohio, in 1833, where he grazed neither of the above named cattle. Probably he will tell us in his next letter where it was, and how many acres he fed this enormous quantity upon, and whether they "handled soft" when ripe, your readers will then be able to form some idea of *youthful capability*, and will have a better opportunity to discern from whence "the bile oozes from every pore;" which issues the most "trash," gets the "hard raps," tells the "untruths," swallows the "bitter pill," is the most "cruel," has the most desire to "gull," his readers, has the most "sel-



fish motive," is "blowing his loud trumpet," is most "straightforward," is the greatest "rodomontade," or is "gasconading;" which has the most "puerility and pretensions;" possesses the greatest share of "malicious feeling," makes the most "false statements," or is the most "contemptible," &c. &c. I am perfectly willing to leave *all these hard words* to your readers—they may reflect back upon the writer when the *truth comes to light*. Notwithstanding Mr. Parsons tells them "I am the man." He may have to exclaim in his own language "Oh the Gods" &c. "where am I."

Mr. Parsons says in one part of his letter that he *had always seen a number of beef cows of mine at our fairs*. In another he says: "At Black Rock, where I understand he has said he could not get his Herefords fat." Will Mr. P. please to tell your readers which of these he intends for the truth.

I think it no more than proper that the name of the person he "under-tands" it from should be known. I deny the charge, and will prove it. Probably it was the same gentleman who "very quietly assured him" that I told him that hard handling was characteristic of the Hereford Bulls." I deny both these charges *in toto*, and will defy Mr. P. to find a Hereford Bull that has not a *moderately thick mellow hide with elastic handling under it, when in good store condition*. Mr. P. says he can prove what he writes any day. Why not do so then when he writes?

Another point: will Mr. P. name *one* breeder of S. H. that makes it a practice to feed the steers he breeds. I know but few of them do so, and I also know that I can go into Darlington fair, in the County of Durham, at any time, and buy any *reasonable* amount of Short Horn steers. If Mr. P. will refer to the report of these fairs, he will invariably see "coarse and inferior cattle quite a drug," or some similar sentence. I ask him to refer to the Hereford fairs, and he will find just the reverse. The former is the district of the Short Horns, the latter of the Herefords, and where very few other breeds are offered. The Hereford steers are generally bought up a day or two before the fair, and often at the breeders own premises. I have been waiting patiently for Mr. P.'s friend's answer as to what that "Niagara Short Horn Cow really is." I hope that judge of Short Horns is not one of that *clique* of "quiet gentlemen," but one who will come out with the truth without fear or favor.

I will now tell you a circumstance that happened a short time since. A certain gentleman who was once a Short Horn breeder, whose name I am willing to mention, if necessary, had an order for a number of cattle and sheep to send to Cuba. He purchased several Short Horns, Devons, and Sheep of other breeders, and a pair of yearling Herefords of me. The following statement is in a letter I send you to me from a gentleman who assisted in the purchase. Please return it to me. "The two yearling Herefords purchased of you in 1844 were sent to the Island of Cuba, and as far as I know are still living. They are the only two animals that survived which accompanied them. The Short Horns,

Devons, and Sheep, all died soon after their arrival."

Does not this speak something in favor of the *constitution and hardness* of Herefords? But how quietly this secret was kept; or did the gentleman "quietly assure" Mr. Parsons of it. I wish some of these very quiet gentlemen would tell their own stories; it would be more manly than leaving it to Mr. Parsons to do it for them. In my next I will give you my ideas of *hard, soft, and mellow* handling.

I am, dear Sir,

Yours sincerely,  
WM. H. SOTHAM.

P. S.—Since reading Mr. Parsons' letter to Mr. Tye in your last number I shall not be surprised at what his vanity may lead him to do. I think that letter thoroughly answers itself, and needs no further comment. Some of your readers say they should have liked it better if it had been "more brief." It "may or it may not" be called "*ad captandam* style of writing."

[As this controversy has been too much characterized by offensive personalities, and as there appears no evidence of improvement, in this respect, the longer it proceeds, we feel, as most of our readers doubtless do, that its termination has now become desirable. To any *short explanations* from either Mr. Sotham or Mr. Parsons, our pages shall be open; and Mr. Sotham's views on the "Handling of Animals," will be acceptable, if divested of personal reflections, and allowed to stand upon their own evidence and merits, of which our readers will be the proper judges. Throughout this discussion our only wish has been that *truth* might be elicited, and we have endeavored to act fairly by both parties; and we have now come to the conclusion that no advantages are likely to come out of it, by being pursued in its present form and spirit.—EDITOR.]

#### FURTHER SUGGESTIONS FOR IMPROVING THE MANAGEMENT OF THE PROVINCIAL EXHIBITIONS, BY THE PRESIDENT OF THE ASSOCIATION.

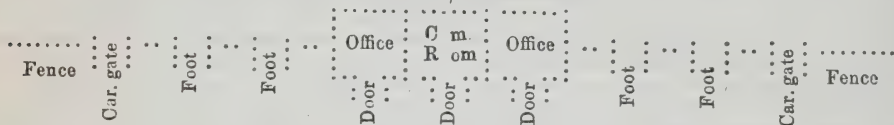
*For the Canadian Agriculturist.*

SIR,—In my note accompanying the last communication, I stated, that a wish, which, I felt assured was fully united in by the other officers of the Association, to see our Canadian Exhibitions conducted upon a system as free from objections as possible, induced me to take the liberty of offering the suggestions then made. The same object in view impels me again to offer for insertion, further matter for consideration.

*Tickets and Badges.*—In a recent number of a foreign Agricultural paper it was suggested that the substitution of tickets of admission to agricultural exhibitions for badges was desirable, inasmuch as improper use had been made of the latter, which could not well be made of the former. From what has come within my own knowledge I think there is little doubt but the transference of badges may have been practised to some extent at our exhibitions,—and to whatever extent that has been the case, the primary interests of the Association have suffered accordingly. Would it therefore not be worthy the consideration of the Association, the restriction of the use of badges to the officers; the members of the local committee; the representatives of the county societies; the judges; the members of the Press and privileged Visitors. And that a tariff of prices be adopted in the sale of tickets, which, while preventing the abuse

of the badge system, would secure all its advantages, namely, convenience in making change, and ease of admission, at a moderate price, without recourse to the officer for tickets. The tariff might be made to embrace—single, family, and horse-men's tickets—also by the half and full dozen at reduced rates.

*Entrances to the grounds.*—Instead of having only one carriage way and two foot passenger gates, one on each side of the carriage way, as at the last show, when there was much crowding, confusion and delay to those who desired to pass quietly and quickly, and loss to the exhibition funds by persons passing without paying, I would suggest that the office booths be so constructed that there could be a carriage way near to each end, and two foot passenger gates in the space between the carriage way entrances and the ends of the said offices—say, something like the following sketch:



This would give additional accommodation beyond what has hitherto been afforded. In connection with the subject of improvement in entrances it may be remarked, that it would also be most desirable that some of the members of the local committee take turns in over-looking the approaches and seeing that constables did their duty, and at the same time were not imposed upon. "A little brief authority" would have a salutary effect in this respect, as well in preventing crowding and confusion. By having the office booths placed on the plan suggested, and a board left off the end of each facing the gates, an eye upon the entrances could also always be kept from within if necessary.

*Plan of grounds and printed list of entries.*—Should the Association adopt the plan suggested in a late number of your journal, of having the list of entries filled up and returned from each County one month before the date of holding the Exhibition, would it not be an improvement on the past, to have printed in small cheap pamphlet form, a catalogue of the contents of the various entries returned to the association, omitting, however, the names of Exhibitors. The cattle, productions, &c., from Canada East, and from the United States could also be embodied in the pamphlet, providing intending exhibitors desired to avail themselves of such publicity, which very many no doubt would, and furnish lists of their intended contributions about the same date as from counties in Canada West. Forming part of this pamphlet, might also be introduced a sketch of the proposed exhibition grounds, showing generally where the various classes of productions would be found; as well as any other explanatory matter which the Association might deem desirable to embody. The pamphlet might be got up by one of the many enterprising Canadian publishers at short notice, and at a moderate cost; the Agricultural Association paying a bonus to the publisher to enable the work to be sold cheaply, and ensure against loss. The contents of the pamphlet would be found most useful and convenient in the hands of visitors to the exhibitions; and to those who are not agriculturists or mechanics, and do not have an opportunity of seeing or at any rate do not take much interest in the premium list published before the show, or the list of awarded pre-

miums published after, in the Agricultural Journal it would serve as a remembrance of the pleasure enjoyed, and a record of what they saw at the exhibition; as well as showing to their absent friends and children what was exhibited, and in so doing, an enlarged interest and pride might be stimulated and diffused among all in this valuable Canadian institution.

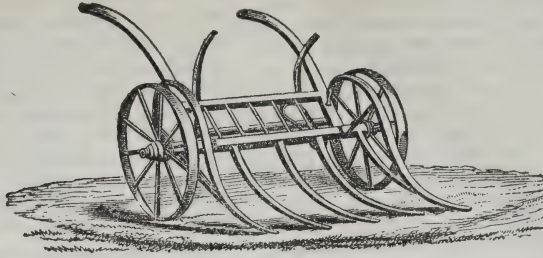
*Attention to distinguished Visitors and the Press.*—Complaints have been made that at the last exhibition there was no sub-committee to receive distinguished and other visitors from a distance, and provide for them information as to where they would find ready and comfortable accommodation, and to show them those other little, but to strangers, most acceptable attentions, and which adds so much in conveying favorable impressions abroad. The members of the press from a distance should have special attention in regard to providing for their accommodation; and to the whole press every source of information connected with the exhibition should be opened, as it is through the circulating press—which, it may be said, now reaches every man's home, whether he lives in a log shanty in the woods, or in a cut stone house in a distant city—a knowledge of the collections, and of the sayings and doings is made to flow. To remedy and prevent a recurrence of this cause of complaint, let a portion of the local committee be appointed some days before the date of the exhibition, whose duty it shall be to look out for the necessary information and prepare it so that it may be had at the Society's office on the grounds, by application on the part of the visitors for whom it is intended—or at the principal hotels to which strangers upon arrival naturally first go. To show attention on the grounds and give information as before referred to, a committee whose duty it would be, might be formed on the first day of the exhibition, of those gentlemen who are ex-Presidents, Presidents and Vice Presidents, and who may be present,—but in the absence of a sufficient number of such, others might be selected who would be willing to act during the continuance of the exhibition.

W. MATTHIE,

Brockville, December 1, 1852.



BROWN'S PATENT GRAIN RAKE.



This new implement for raking and binding grain has been invented and patented by Mr. W. Brown of Toronto, and is manufactured by him here and sold for six dollars. It is a very simple and ingenious implement, and will be found well adapted for the purpose for which it is provided. It is almost entirely made of wood so that any mechanic can easily put it in repair; but from the simplicity of its construction it may be worked for many years without any danger of its going wrong. It will be observed by the cut that it has five teeth, these are so bent as to throw up the grain, and when a sufficient quantity has been raked up to form a sheaf, there is a step which is worked by the foot for the purpose of holding it until it is bound. By this means it is an improvement on the American Grain Rake, as it not only gathers the grain, but throws it up for binding, and where grain is ripe it does not get thrashed out by being gathered with this rake as it does with the common hand rake. With this implement one man will follow two cradlers with more ease, and do the work more cleanly, than one man with a common rake will follow one cradler. In one harvest it will far more than pay itself.

DAIRY HUSBANDRY.—BUTTER MAKING.

In no department, probably, is there greater room for improvement in Canadian farming, than the proper selection and management of dairy stock, and the making of butter and cheese; articles constantly increasing in demand, and consequently improving in price. If the present low price of wheat should continue, our farmers will be obliged to discover other sources of profit, among which the dairy holds out, we think, the best prospects; although we have as little expectation as desire ever to see wheat culture occupying a subordinate position, in a country so eminently calculated, by soil and climate, for its successful prosecution. What we require is the development of the various branches of Agriculture in their full and harmonious proportions.

In the current number of the "Journal of the English Agricultural Society," there is a prize Report on the production of butter, by Mr. Thomas Rowlandson, in which the theory and practice of the art are discussed at considerable length, and with much ability, the various investigations which have hitherto taken place, and the essays which appeared on the subject, being freely laid under contribution for the purpose. In the treatment of dairy cows, the injurious effects of want of repose are prominently dwelt upon, as diminishing the quantity of milk. Protection from cold is equally essential to the production of milk in large quantity as the most nutritious food;

and cases are cited in the Report to show the loss sustained in the twenty-four hours, as indicated by experiment, from inattention to these particulars. By exercise, an increased quantity of oxygen is inhaled into the system; and this oxygen unites with part of the butter and consumes it. When a cow is harassed, and runs to escape from the annoyance, her milk becomes very much heated, diminishes in volume and richness, and speedily becomes sour. When undergoing exercise heat is evolved by the combination of the oxygen with the butter, which in turn elevates the temperature of the milk, and acetous fermentation being induced, the milk becomes sensibly sour. The quality of the food has also much to do with that of the milk. The quantity of casein in the milk, for example, is intimately connected with the nature of the food, being more abundant when supplied with bean and oatmeal, than when partially fed on potatoes—a circumstance which shows us that within certain limits the quality of the milk may be made to vary in its composition by regulating the food.

On being drawn from the cow the milk should forthwith be placed in shallow vessels, for which purpose the glass pans are preferable to any other. The depth of the milk in these pans should not exceed four inches, and it is stated that two inches is the best depth. In a dairy maintained at a proper temperature, the cream should be gathered every twenty-four hours, and in very hot weather the milk should not stand more than eighteen hours. The butter may be obtained from the milk by either of the following methods:—

1. Sweet cream churned alone.
2. Sweet milk and its cream churned together.
3. Sour cream churned alone.
4. Sour milk and its cream churned together.

### 5. Scalded or Devonshire cream churned alone.

Of the comparative produce obtained by treating a quantity of milk by each of these methods, we have the following account:—On the 24th May, the Milk of four cows was drawn into the same vessel, and divided into five portions of six English pints each, the temperature ranging from 55 degs. to 60 deg. On the following day the air was very hot, 76 degs., but that of the milk-house was kept about 60 deg., by the constant evaporation of water. On the 26th, thirty-nine hours after the milk had been drawn from the cow, it was removed from below the cream of No. 1 and No. 3, by a syphon; the cream from No. 1, and the milk and cream from No. 2, were immediately churned in glass vessels:—

No. 1.—Sweet cream churned alone. From previous trials it was found that the addition of cold water to thick cream facilitated the separation of the butter; half a pint of water was added to the cream, the temperature of the mixture at the commencement of churning was 62 degs.—In 15 minutes butter appeared in grains; the churning was continued for 12 minutes longer, or 27 minutes in all, when the temperature was found at 70 degs. The butter was collected, but from the warmth of the weather was very soft. It was put into cold water until the next day, when it was worked and washed in the usual way, and weighed 1,386 grains. It was of a good colour, and perfectly well flavoured.

No. 2.—Sweet milk and its cream churned together. The mixture of sweet milk and cream was churned at the same time; though cold water was added after one half hours' churning, no butter was seen. The churning was continued three hours without obtaining butter.

No. 3.—Sour cream churned alone. On Thursday, the 28th of May, the cream of No. 3, which had been separated on Tuesday, and placed in the milk-house, was now slightly acid, and was churned after half a pint of cold water had been added to it. In twelve minutes butter appeared; and in eight minutes more had united into one mass. During the churning the temperature of the cream had risen from 54 degs. to 63 degs. The butter, when well washed and worked, weighed 1,756.5 grains; the colour and taste were very good.

No. 4.—Sour milk and its cream churned together. On the same day, 28th May, the milk and cream which had become acid were churned together, and half a pint of cold water was added. It was full fifty-seven minutes before any butter appeared, and before the churning appeared to be completed, one hour and fifty minutes had elapsed; showing clearly that more time is required to churn milk and cream together than to obtain the butter from cream alone. The butter was diffused in small grains, and when washed and worked as long as any colour was communicated to the water, it weighed 1,968 grains; colour paler than the last, but of good flavour.

5.—Clouted cream churned alone. On Tuesday, the 26th, the milk and cream of No. 5 were

placed in a vessel of warm water until the temperature of the milk rose to 156 degs., a Devonshire dairymaid assisting in the operation. The milk was drawn from below the cream by a syphon, the latter being kept cool until the following day, when it was churned.

It was ascertained that by churning the milk of Nos. 1 and 3, a few more grains of butter could be obtained on some occasions, but on no occasion from No. 5, so completely does the scalding process separate the butyraceous matter from the milk. The butter of No. 5, when well worked and washed, weighed 1,998 grains. It had a rich ye low colour, and tasted agreeably.

Similar experiments were repeated, the result of which was, that the largest amount of butter was produced by the Devonshire method; the next in quantity by churning the milk and cream together when a little acescent; the third in quantity was afforded by cream kept till it was slightly sour. The smallest quantity was obtained from sweet cream; but on no occasion was butter obtained by churning sweet milk alone.

In order to decide on the keeping qualities of the butter obtained by the four processes previously detailed, samples were exposed to the free action of the atmosphere. No. 1 was always found to remain longer without any rancid taste than the other kinds; No. 3 and No. 4 were nearly on an equality—if any difference, it was in favour of No. 3; No. 5 became rancid more quickly than No. 3 and No. 7. When salted for keeping, rancidity appeared in about the same order, commencing in No. 5, or the butter from scalded cream; next in No. 4, from some milk and cream; then in No. 3, or sour cream; and lastly, in No. 1, obtained from sweet cream. The rancidity was supposed to arise from varying proportions of casein; and on instituting experiments to ascertain this fact, it was found that casein existed in lesser proportion according to the power of the butter in preserving its freshness.

In order to ascertain the effects of overchurning, cream of six pints of milk was separated by a syphon, and churned in a glass vessel. The butter was formed in about half an hour; but the churning was continued for half an hour longer, when the butter had lost its fine yellowish, waxy appearance, and had become pale and soft, while very little liquid remained in the churn. This butter could not be washed and worked until it had remained some hours in cold water, being so exceedingly soft when taken out of the churn. After washing, it was pale, rather soft, and weighed 2,566 grains, which was evidently beyond the due quantity, when compared with the other experiments on the same quantity of milk, which gave the following results:—

No.	Grains.
1 The sweet cream overchurned, yielded	2566
2 The acid cream duly churned	2187.5
4 The acid milk and its cream duly churned, . . . . .	2397.5
4 Scalded cream duly churned	2671

The butter of No. 1 tasted insipid, never became firm, and soon turned rancid. It was found



to yield an unusual quantity both of casein and watery fluid, which could only be separated by melting the butter.

It is a common opinion in some districts, that by adding hot water to the churn, more butter is obtained than by using cold water. Experiments made for the express purpose did not show that the weight increased very much, and it was attended with a perceptible deterioration in quantity, giving it generally the appearance of over-churning.

The results of the experiments above detailed are,—

1st. That the addition of some cold water, during churning, facilitates the process, or the separation of the butter, especially when the cream is thick, and the weather hot.

2nd. That cream alone is more easily churned than a mixture of cream and milk.

3rd. That butter produced from sweet cream has the finest flavour when fresh, and appears to remain the longest period without becoming rancid.

4th. That scalded cream, or the Devonshire method, yields the largest quantity of butter; but if intended to be salted is most liable to acquire a rancid flavour by keeping.

5th. That churning the milk and cream together, after they have become slightly acid, is the most economical process for districts where buttermilk can be sold; whilst at the same time it yields a large amount of excellent butter.

Mr. Rowlandson further observes, that milk is composed of casein, butter, sugar, water, and a small amount of inorganic salts; it has also been stated that the covering of the fatty globules of the milk is dissolved by acetic or lactic acid; seeing this, it is easy to conceive that cream or milk, a little acescent, will “give” the butter with less labor in churning than when the milk cream is void of acidity. Milk like the juice of fruits, such as the grape, apple, pear, &c., contains the principal ingredients requisite for the vinous fermentation, viz., sugar, and a protean compound—soluble albumen—the latter liable to enter into rapid changes when exposed to the influence of the oxygen of the atmosphere; by which means it becomes converted into a ferment, which has the property of slowly, in the first instance, converting the sugar of the milk into alcohol, which latter, by further oxidation, is converted into lactic acid, the lactic acid acting upon the coating of the fatty globules as previously noticed. This action invariably takes place during warm weather, the original fermentative action being somewhat similar to that of the mode of brewing beer at a low temperature, as practised in Bavaria.—Dr. Lyon Playfair has, however, stated that in winter a different action takes place—namely, that during cold weather the temperature is not sufficiently elevated to cause vinous fermentation, and that the action of the oxygen, in the first instance, at this season, is confined to the casein, in other words, the putrefactive fermentation takes place. It is impossible, therefore, to make good butter from milk undergoing such a change

as is here named, for when incipient putrefaction has once commenced, it cannot be arrested by ordinary means, and is consequently imparted to the minute quantity of casein remaining in the butter, and is never wholly extracted; such butter speedily becomes rancid, even in winter, notwithstanding the low temperature of that season is unfavourable to the promotion of putrefactive changes.

The reason why sweet cream requires less churning than cream and milk mixed, arises from the circumstance that in cream alone the absorption of oxygen, which takes place at every agitation, is diffused throughout a much smaller quantity of liquid, the lactic acid formed is consequently much more concentrated, and acts with greater energy on the outer coating of the butter globules; butter, therefore, comes more quickly. It must be observed that, however sweet the cream may be, when placed in the churn, butter is never formed until after the formation of lactic acid. In making butter, sweet cream is a relative, rather than an absolute term, for in fact acescency commences within a few hours after the milk has been set to stand. In endeavouring to obtain butter from sweet milk alone, the labor required to form the butter is excessive, for in this instance the quantity of oxygen that can be absorbed through the influence of agitation is proportionally decreased in the ratio of the increased quantity of liquid throughout which the butter is diffused; whilst, at the same time, a larger amount of oxygen is required in order to convert a portion of the sugar of milk into alcohol, and ultimately into lactic acid. But in a closed churn a long time elapses before these changes take place; consequently, we need not be surprised to find that Dr. Traill and others failed to obtain butter from sweet milk alone; yet on one occasion the experiment was tried in Carlow, butter was obtained from new milk under the inspection of the writer, but it took upwards of five hours to produce it, and the butter was of inferior quality, having all the characteristics of overchurned butter. The reason why it is found requisite in practice to churn milk and cream mixed at a higher temperature has a marked influence in promoting chemical changes. Reasons have already been assigned why the acetic acid, formed in milk alone, must be in a much more diluted form than that which will be found in cream slightly acescent; in order to compensate for this, a higher temperature and longer time is required to produce the desired effect.

The preceding phenomena are in strict accordance with the character of the churn used in the various districts where the lacteal products of the cow are churned in different forms. Almost invariably, certainly over the most extended area, the common barrel churn is used in those districts where cream is churned alone. By the barrel churn a large quantity of butter may be made from cream, with a moderate degree of rapidity, and at a comparatively slight expenditure of labour, particularly as cream, when put into the churn, is almost invariably in some degree acescent, generally enough so for the purpose of obtaining the butter without requiring to be further

oxygenized. No practical benefit is obtained by using cream quite sweet, as the increased labour required in churning far more than counterbalances any slight advantage which butter so made may derive for the purpose of keeping. If proper care is taken in "making up" the butter formed from cream slightly acescent at the time of churning, it will maintain its freshness equal to that made from fresh cream; at the same time avoiding the risk of overchurning, which will always be much greater in churning fresh than sour cream. For churning milk and cream the barrel churn is wholly inadequate, the upright churn, or one with revolving dashers, being requisite in order to sufficiently oxygenize the milk, for which purpose this form of churn is well adapted, as there always remain sufficient openings to admit the atmosphere; whereas barrel churns are hermetically sealed during the act of churning, the operation having to be stopped occasionally for the purpose of opening a vent-hole, which is occasionally done to allow the escape of the gas evolved during the "breaking" of the cream.

The American churn varies only from the ordinary square churns with revolving dashers, in the circumstance that, instead of the dashers being open, the back of the dasher is a flat piece, without any perforation, having raised edges and four transverse pieces, dividing it somewhat similar to the shelves of a book case. When the dasher is turned round, the nests formed as described convey and force into the milk or cream a quantity of the atmosphere equivalent to the cubic contents of the hollow space, which will remain in the interstices alluded to, when their edges come in contact with the fluid; in order, therefore, to produce the greatest action, the fluid ought to be on a level with the edges of those interstices; this will occur when the latter are in a perfectly horizontal position. This form of churn is the best for churning sweet cream, and will undoubtedly produce the butter from milk and cream, in any form, in much less time than any churn that has yet been introduced; but for working large masses of fluid, the labour would be excessively heavy, and in large dairies, where milk and cream are churned together, steam or other power would be required; it also remains to be yet tested on a large working scale, whether the butter will prove as good as that churned by the ordinary methods. Mr. Robinson, of Lisburn, has for some time introduced a churn from France, which is very neat and simple, and well adapted to gather the butter, having a grating for the purpose, to which also heating or cooling appliances can easily be adapted as the season or case may require.

Churning should be regulated by a thermometer, cold water being applied in summer, and warm water in winter, to obtain the proper temperature, particulars of which have already been given. When the butter is made from cream alone, early, in the morning (about 4 o'clock) is the best period of the day for the purpose. When a change is heard in the sound of the churn, and an equal resistance is felt against the dash-

ers, the butter may be expected to form very shortly.

After the butter is taken from the churn it must be well squeezed or "worked" by the hand, and all the water that possibly can be, should be pressed out, it being for this purpose kneaded, washed, and rolled out several times with clean cold water, and the last time a little salt should be kneaded into the mass, which will have the effect of causing the greater part of the remaining caseous matter to exude when subsequently washed in cold water, salt appearing to have the property of dissolving casein, as it does the albumen of bones, in pickled meats; the whole secret of Dutch butter-making consists in this circumstance. If intended for very long keeping, a small quantity of saltpetre may be added, which will prevent, in a great measure, the tendency of any remaining caseous matter entering into the putrefactive state—the cause of rancidity—the difference in quality between salt used in England and Holland having nothing to do with the superior keeping quality of the latter. If properly made, half an ounce of salt to 1 lb of butter is sufficient if intended for keeping; and  $\frac{1}{4}$  oz. of salt to the lb. if intended for immediate use. The circumstances connected with the formation of butter from clouted or scalded cream have already been sufficiently detailed; for immediate use the quality is not equal to that formed by ordinary methods, and for keeping is wholly inadmissible; the superior weight obtained is attributable to the quantity of casein and coagulated albumen, mechanically mixed with the butter, which it is impossible to eradicate by any subsequent means.

It may be important occasionally to know that a little saltpetre dissolved in warm water, and mixed with the cream taken from milk with a turnip flavour, entirely eradicates it in the course of churning.

A fictitious colour can be given to butter by the use of annatto, or the scrapings of the red part of carrots; but neither will give the appearance of fine grass butter. All such practices are to be deprecated; the latter described mode, however, is the preferable one, in case artificial colouring is considered desirable.

#### A SUBSOIL COMPANION PLOUGH.

The Oxford *Journal*, in speaking of the Stow-on-the-Wold and Chipping Norton Agricultural Society, England, says:—

"As soon as the ploughing was over, the company congregated to witness the trial of a subsoil companion plough, manufactured and patented by Mr. Gillett of Brailes. This plough is so constructed that it combines all the features of an ordinary plough with the addition of a subsoil plough, which may be used at the same time, or detached or suspended if necessary. The combination of these advantages naturally excited considerable interest as to whether the implement could fulfil what was said and expected of it, and its trial was looked on with great anxiety. The land selected for the trial was by no means adapted for it, because it was light and rocky,



and therefore the plough could not sufficiently develop its powers, and this was admitted on all hands; but the inventor felt satisfied that even under such disadvantages it would give a tolerable idea of its value and importance. In that conviction he was fully borne out by the trial, for the work was well executed, and the subsoil plough, taking the lower furrow and following in the horses' track, showed at once its perfect applicability, especially for stiff, heavy land, where the horses' tread renders the ground so hard as to prevent the possibility of the water getting away. For all root crops this implement appears to be admirably adapted, and in ploughing for beans, or after turnips, the manure can be most advantageously ploughed in, so as to leave it near the surface, which every one is aware is a most desirable object. The general opinion of all who examined this plough, and witnessed even this trial, was that it was one of the most valuable implements that had yet been brought before the notice of the public, for it not only possesses the advantages of ploughing and subsoiling at the same time, and with one operation, but the cost of this combined power is but a trifle beyond the ordinary plough, and the subsoil can be attached to any plough, while the draught is but slightly increased by it. The cost of the plough complete does not exceed six guineas, and of the subsoil alone to be attached to any other plough, two guineas, so that the expense is not likely to interfere with the demand for an implement which must come into general use as soon as parties become acquainted with its merits. We understand that the patentee has already received numerous orders, and of all the improvements which have been devised for the preparation of the land to receive seed, there is not one which is so calculated to effect its purpose in a more successful manner, and there is no implement of the possession of which a farmer may be prouder. It is not anticipating too much to say that within a twelvemonth there will be scarcely an occupier of stiff, heavy, clay soil, who will not have this implement in operation, for all those who have used it (and it has been at work a short time already) concur in saying that it does most effectually fulfil all that it professes. Great credit is due to the parties who have brought their skill and judgment to bear upon an implement which many were inclined to think admitted of no improvement, but the reverse of which has been developed in so eminent a degree that we doubt not that the inventor will for many and many a year be regarded as one who has conferred a benefit on Society to an extent that perhaps he little anticipated."—*Mark Lane Express*.

#### A NEW AGRICULTURAL MACHINE.

The Albany *Argus* describes an invention which is designed to supersede the plow, the harrow, the roller, and the man who sows the seed. It says:

"Yesterday we were shown the model of a new, and what purports to be a valuable improvement in one of the laborious department of the agriculturist, and for which the inventor procured

a patent in April of the present year. It embodies in one implement the capacity for ploughing with four plows, scattering the seed in the furrows, harrowing and rolling. The plows are ranged at suitable distances, in front of the carts, and the number can be diminished at pleasure, or four used. Immediately following and attached to the plows, are the buckets for the reception of the seed—corn—included and from which it is distributed. The harrows follow, behind the wheels of the cart, and the rollers bring up the rear. On the platform of the cart, and forming a part of it is a basin of the same width, which is the receptacle of the seed. Its position is immediately over the buckets, and as the cart goes forward, it is so arranged as to allow the seed to fall, in suitable quantities, in the buckets, below. The platform is large enough for the driver, and will also accommodate several bags of grain. The harrows are also the width of the cart, in two pieces, as are also the rollers, for more easy passage over the ground. The entire arrangement can be removed with ease and the cart used in other capacities upon the farm.

The inventor is Mr. Henry Beebe, a young mechanic of this city. While it appears to be a valuable improvement, and has received the approbation of many distinguished agriculturists, its utility remains to be tested. There is scarcely a doubt, however, that on prairie land it will prove a valuable acquisition to the implements of the farmer."

#### FARMERS' CLUBS.

*To the Editor of the Canadian Agriculturist:—*

Amongst the various methods for encouraging Agricultural Improvements, the forming and keeping up of Farmers' Clubs, should not be overlooked.

Clubs for the discussion of subjects connected with Agriculture have been common in Britain for many years, and much of the improvement that has taken place in the practice of agriculture in that country, may be traced to their influence, as from them have sprung many of their flourishing agricultural societies; and no doubt but the same beneficial effects would follow, the more general formations of such clubs in this country. Indeed there seems to me to be more need for them here than in Britain,—for there the constantly returning fairs and markets bring the farmers frequently together, affording them opportunities to talk over their pursuits, experiments and prospects. In this country besides the want of frequent fairs and markets, the farmers in every locality come often together from almost all the different counties of Great Britain and Ireland, (besides those that may be natives of the country;) there is consequently a want of that general social feeling, which is common among those that have been brought up and educated in the same neighborhood,

As the labors of the year may be said to be now brought to a close, and as farmers generally enjoy more leisure at this season of the year than at any other, the present is the proper time for farmers to turn their attention to the formation of clubs in those townships or neighborhoods, (for there might often be more than one in a township,) where they do not already exist, as besides the information which might be acquired at these meetings, it is a very pleasant way of spending an occasional winter afternoon or evening with our neighbors and friends, discussing the topics we are best acquainted with, and in which we are most deeply interested.

In the formation of a Club it is of great importance, at the out-start, that a fit and proper person be selected for chairman—a person of discretion and prudence—one whom the members generally respect; one who is generally looked up to as a pattern in his calling; one who has the necessary tact to draw out the information which each person present may possess on the subject under discussion; and, one who, if need be, can repress those that are inclined to take up more than their due share of the time of the meeting.

The officer next of importance to the success of the Club is the Secretary; it will tend greatly to advance the interests of the Club if he is able to make brief reports of the various subjects discussed at its meetings for the local or general newspaper of the place; giving an outline of the views advanced by the different speakers, and as the Press would spread abroad all the valuable information thus reported, I have no doubt, whatever, that every township of the Province can find *farmers* to fill—and fill well—the offices of both Chairman and Secretary, if they can only be prevailed upon to try.

I believe it answers very well at each meeting of the Club to appoint the subject for discussion for next meeting—or the same subject, if need be, may be continued for several meetings—then the subject is given out before-hand, the members will naturally turn their minds to the subject, and call up from the store-house of their memory, their experience on the particular branch of their calling they are about to discuss; for it is the facts and experiments of the *practical part* of the community that is wanted, and not mere speculation and theory. Each member should come prepared not only to hear the views of others but to express his own, however briefly, and thus add to the general stock of knowledge. If some such plan was generally followed in this Province, a mass of facts would ere long be brought out that would help greatly to promote and advance the interests of the farming community.

I have no doubt that if Farmers' Clubs were commenced and kept up with spirit, their favorable effects would soon be seen in the improvement of all the various departments of the farmer. Our stock would be improved, new and better implements would be brought into general use for the cultivation of the soil; new and more productive varieties of seeds and roots would be more quickly and generally diffused; the yield of our various crops would be augmented; the products of household manufacture would be increased and the quality improved; and as farmers would become better acquainted with each other, they would cultivate a more social and neighborly spirit, and feel a deeper interest in each others welfare, and as a natural consequence a more liberal and enterprising spirit would be generally infused throughout the community. Such meetings too, would accustom our farmers (more especially the younger part of them) to arrange and condense their views of the different subjects connected with their calling, and would tend to encourage them to write for the Agricultural Press of the country, which you are aware, Mr. Editor, is very much wanted. It would be useful, where practicable, to combine with the Club an *Agricultural Library*, to be procured and kept up by a small subscription from each member; as in many parts of the country good agricultural works are not easily obtained. And though such a library would be necessarily small at first, yet if well attended to it would in a short time become valuable, and help to keep the Club together, be useful for reference, and help to awake and promote reading and thinking habits among the members generally.

A TENANT FARMER.

November, 1852.

#### REPORT UPON THE POTATO DISEASE AND ITS CURE BY DRESSING THE SEED BEFORE PLANTING.

FROM THE "IRISH AGRICULTURIST."

To the Council of the Royal Agricultural Improvement Society of Ireland.

The Secretary reported that having had a call from Mr. George Eaton, gardener to Sir Thomas Butler, Bart., of Ballintemple, county Carlow, and heard the former explain in detail a variety of experiments in growing potatoes, whereby Eaton stated he had discovered a mode of growing perfectly healthy tubers, he addressed a note to Sir Thomas Butler, on the subject, and received a reply stating that Eaton had succeeded in so dressing and planting his potato-seed as to grow sound crops of good quality, and that "this year, although the crop in the fields of Ballintemple is injured to nearly the extent of one-half, and not a field in the neighborhood has escaped without considerable injury, I can safely assert, that in



about one rood of ground which has been planted in the garden, not a solitary plant has been affected."

The matter being one of national importance, and the honorable baronet, who advised Mr. George Eaton to apply to this office, having vouched for the fact of perfectly good and healthy potatoes being grown by Mr. Eaton in Sir Thomas Butler's gardens, I considered it my duty to make a preliminary investigation of the grower's case, and to report thereupon to the council as follows :

1. Mr. George Eaton explains that he was in the employment of the late Countess of Belvedere for seven years as land-steward and gardener, during which time he obtained seventeen prizes from the Westmeath Horticultural Society at its meetings held in Mullingar ; some of these prizes being given for the best early potatoes.

He afterwards lived in the service of the Right Hon. the Earl of Meath, during which time he was awarded at the Royal Dublin Society's Show two medals for the best sample of Indian corn grown by him.

He left Lord Meath's service in April, 1849. In September thereafter he went to a Mr. Dawson of Cullamore, where he was till January, 1850, when he went to Sir Thomas Butler, and with whom he has been till lately.

2. Mr. Eaton explains that subsequent to the violent attack of the potato disease in 1845, he was doubly careful in *greening, preserving, and selecting* the seeds for his crops, but still they failed to a large extent. But it occurring to him that the virus of the disorganization either proceeded from small insects which he saw in the roots of the plants, or that these injurious insects resulted from a deleterious fluid or substance in the tuber, which was foreign or opposed to the plant's healthy development, he (Eaton) bethought himself of applying a compound dressing of certain substances to the potato tubers when cut for planting, in order to ascertain, if possible, whether such deleterious fluid, or injurious insects, were the cause or effect of that vegetable disorganization which preceeds or follows from the potato disease.

Accordingly, in 1848, he took some potato seed, purchased from Mr. O'Farrel, seedsman, Dublin, and sowed the same in a melon bed, in the month of April. The seed sprouted, and the plants grew up vigorously till about the middle of July, when they were blighted in a single night. Eaton then took up the plants, and cut them down to about four or five inches in length. The one-half of them he planted upon a garden border, and the other portion he replanted in the melon bed. The latter he dressed with his composition before setting. These grew vigorously and were taken up in November, the tubers being the size of hen-eggs, and perfectly sound. Those plants which had not been dressed with the composition were taken up at the same time, and were found to be generally diseased, many rotten.

The next experiment he made in February, 1857, by cutting large seed, applying it to two dressings of his compound, then planting. At

the same time he planted similar seed alongside of the dressed potatoes. When the dressed ones came to maturity, they were all sound and of excellent quality. Their haulms were vigorous and healthy all along, showing at no time any symptom of blight, and only colouring from the fading process inseparable from the ripening of the tuber. The others, which had not been dressed with the compound, but were planted alongside of the dressed ones, showed the disease upon the stalks at an early stage, getting worse and worse ; and when the tubers were taken up they were much diseased.

In order to satisfy his mind that his system was not an exceptional case, but might be held to apply generally in the preparation of seed, so as to avert the potato disease, George Eaton, in February, 1852, planted potato seed cut, dressed, and undressed, exactly as in the experiment and process described above, as gone through in 1851. Those grown from the seed dressed with the compound were all sound in haulm and tubers, as above explained in the experiment of 1851. The potatoes now on the council-table are the roots so grown from dressed seed ; and judging from the healthy streaky texture of the skin, and the depth of the eye of the tuber, no potatoes seen by me since the first appearance of blight seem so vigorous and safe to be used as seed ; but whether they would grow perfectly healthy without being again dressed with Mr. Eaton's compound is very doubtful. He says, that in the experiments of 1851 and 1852, the dressed and undressed seed was set plot beside plot, and that while the haulm of the compound dressed seed grew always healthy and the tubers sound, the seed which had not been prepared with the compound, produced haulms and tubers [alongside of the others] affected and diseased in the same manner as the ordinary crops of the country.

Mr. Eaton says that his preparation and application would not increase the price of seed potatoes more than 10s. per acre, if quite so much.

A few hours after the dressing is applied the cut seed emit a thickish, dark-coloured fluid, which has a most disagreeable stench.

He has experimented successfully upon Beldrum, Pink-eyes, Bangers, and Ox-nobles, and will undertake to extract the deleterious matter from any kind of potato.

THOS. HARKNESS, Secretary.

September, 1852.

#### MANUFACTURE OF FLOUR.

The Boston *Courier* gives the following sketch of the manufacture of flour as it is pursued in the immense mills in Western New York :—

Very few of those who have never been west of the Hudson River, in the State of New York, have any definite idea of the extent of flour manufactured in such localities as Oswego, Rochester, or Black Rock near Buffalo. The enormous brick structure for manufacturing purposes at Lawrence, Lowell, and Manchester,

are very well understood, but a Cyclopan pile of stone nine stories high, erected for the sole purpose of storing and grinding wheat, is seldom thought of. Take city of Rochester alone, where some thirty mills are just now commencing their full operations on the rich wheat crop of the Genesee valley, consuming each, from four hundred to three thousand bushels of wheat per day, and pouring the results in the shape of wheat flour into the commercial laps of the eastern cities, from whence it is disseminated in life sustaining currents not only through the manufacturing districts of New England, but through a large proportion of the whole commercial world.

A large flouring mill requires an immense propelling power, but employs very few hands in proportion to the amount of business done, compared with either a cotton or woollen mill. The grain literally goes through the mill and comes out flour, without the intervention of a human hand. A few men superintending and controlling the powerful machinery, and guiding the operations, are all that are required. They flit about, apparently careless and unconcerned, among huge wheels in swift revolution, which by one mis-step would crush them as inevitably as a foot fall would crush a worm.

A canal boat load of wheat is moored in the basin beside one of the mills. A system of elevators is let down, consisting of a series of sheet iron buckets rivetted upon a broad leathern belt, passing between two pulleys, one in the weighing-room of the mill, and the other resting near the wheat in bulk in the hold of the boat. Four men with scoops immediately commence shovelling the grain into the ascending buckets, which as they reach the upper pulley and reverse their direction in the descending line, spill their contents into the neighbouring scale pan. When this is filled and weighed it is passed down by a trap in the bottom of the pan into the bin below, whence it is again elevated to the attic and deposited in a horizontal trough running the whole length of the mill. Within this trough revolves a screw-shaft, which carries along the grain and drops it at any required point, by means of sliding gates in the bottom of the trough, through which the wheat drops if any one of the series is left open. From this lofty elevation it passes into the smut beaters and blowers, thence through the chess and cockle screens down again to the ground floor into the hopper of the grinding stones, where the grain is cracked into a commingled mass of flour, middlings, shorts and bran.

But this bruised mass of what was once beautiful wheat, has not reached its lowest point of descent yet; for,

"In this lowest depth a lower deep,  
Still gaping to receive it opens wide,"

and it falls from the stones into the cellar of the mill, whence it is again re-elevated to one of the upper stories and deposited on the floor of a huge room, called the cooling-room, where it is stirred by the long arms fixed at right angles in an upright shaft. The ground wheat as it comes from the stones is very hot from the severe friction and crushing it has undergone, and it is deposited in the cooling-room, near the wall, in a large and continual stream from half a dozen sets of mill stones. By the operation of the machinery in this room the ground wheat is made gradually to approach the centre under a continual stirring process, and there drops through a trap into the bolting chest, in which revolve half a dozen long cylinders covered with cloth of the most beautiful texture imaginable. These bolting cylinders are slightly inclined one way or the other, and the contents gradually work along from the finer into the coarser bolts, that which remains growing less and less in quantity, until the refuse bran is finally poured out of the end of the last bolt. The various qualities of flour, &c., drop from these bolts into the packing bins on the floor ready to be barrelled for the market.

All this is done as we have said, by machinery, almost without the intervention of a human hand, and is, besides, a very quick process.—Wheat which lays in bulk in the hold of a boat to-day, may be flour on its way to New York or Boston to-morrow. We have in this city two mills in which this operation is performed, but we must go west of the Hudson if we would see the manufacture of flour on a large scale. We never expect to see the time when a flock of sheep is passed through the mill, and come out mutton dressed ready for the market, and cloth ready for the tailor. We never expect to see the cotton plant turn out woven fabrics without the intervention of pickers, cotton gins and looms, with the thousand hands necessary for their attendance; but in the manufacture of flour we do see now manual labour comparatively superseded by machinery which is the result of human ingenuity and skill.

**TO BAKE APPLES.**—Sweet apples properly baked and eaten with milk are excellent. The best method of baking tart apples is, to take fairest and largest in size, wipe them clean, if thin skinned, and pare them if the skin is thick and tough; cut out the largest portion of the core at one end, and place the fruit on well glazed earthen dishes or pans, with the end which has been cored upwards, and fill the cavity with refined powdered sugar. Then place in the oven or other apparatus for baking until sufficiently cooked. Then take out, and when cold they are perfectly delicious.



## HORTICULTURE.

## PLANTING FRUIT TREES.

[The following useful observations are from the *Guelph Advertiser*, and the plain practical directions they contain will no doubt be of service to some of our readers. We had the pleasure of seeing Mr. Hubbard's Nursery a year or two ago, and felt much gratified at the progress which fruit-raising, as well as other departments of Horticulture, are making in a new and rapidly improving district, which has already won a reputation for improved husbandry and stock-breeding.]

"I feel it my duty to all who have favoured, or may favour, me with their patronage, to offer a few remarks relative to the planting of fruit trees. Many persons plant a tree as they would a post; and many an orchard rudely thrust into the ground struggles half-a-dozen years against such adverse circumstances before it recovers from the effects.

In planting an orchard let the ground be made mellow by repeated ploughing. For a tree of moderate size the hole should be dug three feet in diameter, and at least twenty inches deep. The hole should then be filled up to within six inches of the surface with some compost or well-rotted manure; in every instance the surface soil should be well mixed with manure, if used. Shorten and pare smooth with a knife any bruised or broken roots, place the tree in the pit and hold it upright while another person is making the earth firm gradually around and among the roots; at the same time with the hand, spread out the small roots, and fill in the earth neatly around each of them. Nine-tenths of the deaths by transplanting arise from hollows being left among the roots by a rapid and careless mode of levelling the earth among them. When the pit is two-thirds filled pour in a pail of water, which will settle the soil, and fill up any vacancies that may remain. Wait until the water is fully absorbed, and then fill up the hole, pressing the earth moderately around the tree with the foot. The moist earth being covered by the loose surface soil, will retain the moisture for a long time. We rarely find it necessary to water again after planting in this way, and a little manure or litter placed around the tree upon the newly moved soil will render it quite unnecessary. Frequent surface watering is injurious, as it causes a hard crust on the top which prevents the access of air and light, both of which are absolutely necessary to the growth of the tree. Fruit trees should not be planted too deep; probably not more than an inch

deeper than they stood in the nursery. It would be well to heap a little mound about the stem during the winter, as it will prevent the frost from raising the tree, and also keep off in a great measure the attacks of the mice; although bass wood bark around the stem is preferable in this respect.

Young trees cannot be expected to thrive in a sod land. When it is necessary to keep a young orchard in grass, a circle should be kept dug around each tree, but the cultivation of the land will cause the trees to advance more rapidly in five years than they will in ten when it is allowed to remain in grass.

The staking of trees is important, and so is the after culture. The proper distance apart for standard apples is thirty feet each way. The most important consideration for the planter, should be the securing of good varieties. As to the season for transplanting, I think it of little or no consequence whether spring or fall, provided the above hints are attended to.

I have said more than I intended, and fear that I have trespassed on your space.

I am, yours,

E. HUBBARD,

*Guelph Nursery.*

[We direct the attention of our readers to the foregoing remarks with confidence that they may be relied on; not less from our knowledge of the writer's experience, than from the substantial evidence which accompanied the document, of his ability and capability to produce as fine a fruit as the most fastidious could desire.]

## PLANTS MULTIPLIED NOT BY SEED.

## PROPAGATING BY OFFSETS, LAYERS, AND SUCKERS.

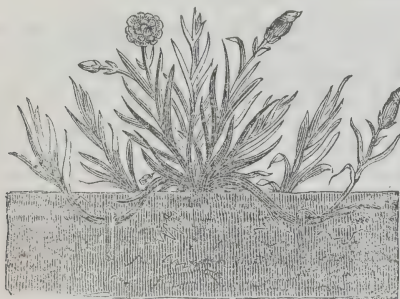
Many plants, instead of having a number of crowns or eyes, have only one, and send off short stems like the daisy and houseleek, or large runners like the sweet violet, the ground ivy, and the strawberry, with young plants at the end, which readily take root, and may either be allowed to do so after cutting the runner, or before the separation, if it is required to make them rather stronger.

The time for doing this must be in some measure regulated by the growth of the offsets, and by the season of the year; for it is important that all such plants should be well rooted and established in the soil, before the usual period for the commencement of the autumnal frosts.

When the offsets are not naturally capable of forming roots of themselves, as in the carnation, an operation called *layering* is performed, which consists of interrupting the passage of the pulp downwards, by making an upward slit with a penknife half through the stem, and by several other methods; then, fixing the cut part a little

under ground with a hooked peg, root fibres will form, and the root layer may, of course be removed, and planted elsewhere.

The operation of layering being an important one, and capable of being performed on a great number of plants, it is highly necessary that it should be properly understood. Much depends on the manner in which the slit or incision is made; for, in layering carnations, if, by any means, the knife be suffered to pass more than half way through the stem, it will be exceedingly liable to be broken, or even to rot off; therefore, the knife (which must be a very sharp one) should be guided with great care, and the incision commenced about a quarter of an inch below the joint; then cut off, neatly and smoothly,



The operation of layering shown in the Carnation.

the tip or end of the tongue thus formed, as if this is left jagged or rough, it will absorb too much moisture, and be very liable to rot, thus preventing the layer from rooting. The layer should in no case be placed deeper than an inch in the soil, and a little fine and rich mould should be introduced to cover it, which will prevent it from becoming too wet. Unless the slit in the stem is made to pass through the middle of a joint, it will never succeed in forming roots.

The lower part of the stems intended to be layered, should be deprived of their leaves; these must not be plucked off, but cut with a sharp knife, to within a short distance of the stem, and none of the leaves should be left that would be buried in the soil when the shoot is fastened down. Carnations should be layered as soon as the flowering season is nearly over, and none of the stems which had produced flowers should be employed for this purpose.

Many other plants, such as double wallflowers, lilacs, honeysuckles, roses, sweetbriar, laurels, and most shrubs and evergreens, may be propagated by layers, it being a very certain, as well as an easy mode of getting a number of plants. In layering roses, however, and other plants of shrubby habits, a different method must be adopted to that of layering carnations, for with carnations, the stems being exceedingly brittle, it is necessary to *tongue* them, in order to check the flow of the pulp; but with shrubby plants, such as roses and laurels, all that is required is to run a penknife through the shoot to be layered, at a bud or joint, and having slightly twisted the shoot, so as to open or crack the bark round the part so cut, bury it to about three inches below the surface of the soil, securing it with a hooked peg,

and treading the soil slightly round it, so as to place it almost erect. In this state it will soon form roots at the joint in which the incision was made, and may then be separated from the parent plant, and planted where required.

From the roots of some trees which lie near the surface of the soil, a quantity of young shoots are produced called *suckers*. These are generally very unsightly, and deprive the tree of much of that nourishment which should be devoted to the support of the flowers and fruit. They should, therefore, never be allowed to remain in such situations, even though they were destroyed; but they are all capable of forming a fresh plant, if taken up with care. They are generally most abundant about the roots of gooseberries, currants, plums, lilacs, and roses, but are found occasionally with most shrubby plants or trees. The suckers of gooseberries, currants, and fruit trees, should always be eradicated and thrown away, as they will never produce good fruit; those of lilacs, and other flowering shrubs and trees, may be removed in the autumn, and planted in any required situation, provided care is taken to lift them with sufficient roots, and, if possible, with root fibres and their tips attached to them; but, even these are inferior to the plants produced from layers, as they will not come into flower for a great length of time, while layers usually bloom much sooner.

Roses, especially the common sorts, produce excellent suckers, which answer well for stocks, to bud the choicest sorts upon. The suckers from the better kind of roses, will flower best if converted into layers.

In the monthly rose, suckers make the best plants, as they do also in the sweetbriar; but this does not produce many. Such suckers, when long and easily bent, may also be treated as layers; and as many new plants may be obtained as there are buds on the sucker, by making a ring-cut through the bark below each bud, and laying over the whole sucker, when pegged down, a shallow covering of rather dry earth, when a stem will rise from each bud, and roots grow from each ring of bark that has been cut—a good mode of multiplying rose trees.

#### THE TASTE FOR PLANTING.

Our agricultural and horticultural periodicals are doing great things in popularizing this taste among our country people, and planting once the *fashion*, everybody's house will be smothered in trees and climbers. Railroads, too, help the people to travel. They thus see what other folks do; and they—that is the most observant of the travellers—go home and do likewise. Rely upon it, the taste for planting is in progress. Compare the recently built farm houses all over the country, with those of our boyhood, and mark the change! Then, they were utterly bare of trees as of out-houses; and all alone by themselves, naked, inhospitable, and desolate to the eye. Now, even the same old tenements, inhabited by people of better taste, are changed in their outward style; various offices are attached, and they are comfortably nestled amid the deep sha-



dow of fine trees, and rejoice in plats of shrubbery and flowers.

It is wonderful to compare the taste of the labouring English with that of the same class of people in our own country. The one you can scarcely keep from cultivating his flowers; and if he, himself, has no time to attend to it, his wife and daughters will. The other you can neither drive nor coax into the slightest attempt of the kind. I have a quiet little cottage at the end of my principal farm—the tenement itself humble in appearance—scarcely worth one hundred dollars. I put into it an American “hired man,” who chopped wood in winter, worked on the farm in summer, and was a capital hand at all sorts of rough labour. I had some fine young forest trees about the place, a comfortable garden stored with currant bushes, roses, and such like little affairs, as would make a labourer’s home cheerful—for I like to see everybody about me in the enjoyment of such little pleasant things, not costing much, and looking pretty. When he removed into it, I told him how comfortable and convenient these little appendages would be about the place, yet observed the incredulous staring look he gave me by way of reply. To cut the matter short, during the year the man occupied the place, his “young barbarians” hacked into, girdled, and spoiled several of the trees; the currant bushes were mostly stripped of their branches to carry into the “shanty” to pick the fruit from, while the cow came in to browse the remainder. The pig was let loose into the wretched, weedy garden after the potato and cabbage patches were cleared, and he rooted up the roses and hollyhocks, and the place was sadly in ruins. When I remonstrated against such vile destruction, the answer was, that “they had no use for such knick-nacks, and did not see the use of them!”

This man “walked Spanish,” of course, at the end of his year, and was succeeded by a quiet English labourer in like capacity, bating the “wood chopping”—Englishmen usually knowing little of such labour. And now came a change truly. “Oh, what destruction has been made here,” he would often exclaim. “I must fix these little things all up again. A nice bit of fruit we’ll get from these currants, and properly trimmed they’ll grow some goods again; and sir, may I go into your *house*-garden and take up a few side-roots from the peonies and roses, and sum’mut of other things that can be spared and put in here? For I hate to see a place naked, and without something to rest one’s eye upon on a Sunday, and to give my wife a flower pot now and then.” “To be sure you can,” was the reply, “and the more of them the better.” All this was done in the course of the spring and no time lost either—for it was accomplished out of the regular working hours; and in less than a twelvemonth the place was turned into a little paradise, where I often drop in and take a quiet chat as I pass, and learn from the labourer and his good-mannered wife, much of the humble and rural life of England.

The parallel will hardly, perhaps, hold good with the higher classes in America, but the dif-

ference in the taste of the two people is surprising. This difference is partly incidental to the newness of our land, but much more owing to a *want of taste*—that’s the flat reason. Here, we go blundering and daudering along looking to the “mainchance,” and to the mainchance only, as if to gather together dollars and estates, with which to bespoil our children who are to come after us—and in which latter purpose we usually succeed to admiration—were the only objects worth striving for in life! On the whole, however, we are improving—but not half fast enough.—*Horticulturist*.

GREAT CROP OF STRAWBERRIES.—We have so often chronicled accounts of the immense crops which have been produced from beds of our Seedling that we scarcely deem it important to do so again; but our friend, Mr. C. Whiting, of Boston, has just handed in the following, which is so remarkable that we make no further apology for giving it to our readers:

“Mr. William Gore, of Freeport, Me., raised on a piece of land eleven feet by forty-three, the past season, three and a quarter bushels of Hovey’s Seedling strawberries.—The bed was six years old. The land on which these berries were raised, when purchased by Mr. Gore a few years since was considered almost worthless; it bore weeds of an inferior growth; but under his peculiar care and cultivation it has become very productive; it was moist, dark sandy loam. He dug deep ditches and filled with cobble stones, which were covered with seaweed, then a top dressing of such earth as he could obtain, with manure well incorporated by deep plowing. His garden vegetables and fruits show what may be done by a little care and attention. A few summer potatoes reached our Faneuil Hall Market the past season, raised by Mr. Gore, which were equal to any ever brought here during winter. He has filled his ground with choice fruit, and has lately purchased twelve acres adjoining, though now in a very unproductive state.”

This is at the rate of nine thousand six hundred quarts to the acre, or about one quart from every four and a half square feet of soil. A greater yield than this on so large a piece of ground we think was never made; and this too on a bed six years old. If any one can beat it we should be glad to record the name of the successful cultivator.—*Hovey’s Horticultural Magazine*.

THE ERUPTION OF MOUNT ETNA.—Letters from Sicily state that the eruption which commenced on the 20th of August still lasts, causing alternate hopes and fears according to the increase or diminution in the quantity of lava that flows forth from the fiery mount. The new crater that opened on the 8th of November, pouring forth a fresh current, had up to the 9th, descended as far as the Volia della Sciancato, 5 miles distant from Zaffarana Etnea. The mountain continued to send forth loud reports and to shoot up globes of thick smoke interspersed with fine ashes.

## MISCELLANEOUS.

### POINTS OF A GOOD HOG.

I could caution the reader against being led away by a mere name, in his selection of a hog. A hog may be called a Berkshire or a Suffolk, or any other breed most in estimation, and yet may, in reality possess none of this valuable blood. The only sure mode by which the buyer will be able to avoid imposition is, to make names always secondary points. If you find a hog possessed of such points of form as are calculated to insure early maturity, and facility of taking flesh, you need care little what it has seemed good to the seller to call him; and remember that no name can bestow value upon an animal deficient in the qualities to which I have alluded. The true Berkshire—that possesses a dash of the Chinese and Neapolitan varieties—comes, perhaps, nearer to the desired standard than any other. The chief points which characterize such a hog are the following: In the first place sufficient depth of carcass, and such an elongation of body as will insure a sufficient lateral expansion. Let the loin and chest be broad. The breadth of the former denotes good room for the play of the lungs, and a consequent free and healthy circulation, essential to the thriving or fattening of any animal. The bone should be small and the joints fine—nothing is more indicative of high breeding than this; and the legs should be no longer than, when fully fat, would just prevent the animal's belly from trailing upon the ground. The leg is the least profitable portion of the hog, and we require no more of it than is absolutely necessary for the rest. See that the feet be firm and sound; that the toes lie well together, and press straightly upon the ground; as also, that the claws are even, upright and healthy. Many say that the form of the head is of little or no consequence, and that a good hog may have an ugly head; but I regard the head of all animals as one of the very principal points in which pure or impure breeding will be the most obviously indicated. A high bred animal will invariably be found to arrive more speedily at maturity, to take flesh easier, and with greater facility, and, altogether, to turn out more profitably, than one of questionable and impure stock; and such being the case, I consider that the head of the hog is, by no means, a point to be overlooked by the purchaser. The description of head most likely to promise, or rather to be concomitant of, high breeding, is one not carrying heavy bone, not too flat on the forehead or possessing a too elongated snout—the snout should be short, and the forehead rather convex, curving upward; and the ear should be, while pendulous, inclining somewhat forward, and, at the same time, light and thin. Nor should the buyer pass over even the carriage of a pig. If this be dull, heavy, and dejected, reject him, on suspicion of ill-health, if not of some concealed disorder actually existing, or just about to break forth; and there can not be a more unfavorable symptom than a hung-down, slouching head. Of course, a fat hog for slaughter, or a sow heavy with young, has not much sprightliness of deportment.

Nor is color altogether to be lost sight of. In the case of hogs I would prefer those colors which are characteristic of our most esteemed breeds. If the hair be scant I would look for black, as denoting connection with the Neapolitan; but if too bare of hair, I would be disposed to apprehend too immediate alliance with that variety, and a consequent want of hardihood, that, however unimportant, if pork be the object, renders such animals hazardous speculations as stores, from their extreme susceptibility to cold, and consequent liability to disease. If white, and not too small, I would like them as exhibiting connection with the Chinese. If light or sandy, or red with black marks, I would recognize our favorite Berkshire; and so on, with every possible variety of hue. These observations may appear trivial; but they are the most important I have ever yet made, and the pig buyer will find his account in attending to them.—*Rural Hand Book.*

### EXPERIENCE OF ANIMALS.

Animals are prompt at using their experience in reference to things from which they have suffered pain or annoyance. Grant mentions an orang-outang which, having had when ill, some medicine administered to it in an egg, could never be induced to touch one afterwards, notwithstanding its previous fondness for them. A tame fox has been cured from stealing eggs and poultry by giving them to him scalding hot from the saucepan. Le Valliant's monkey was extremely fond of brandy, but would never be prevailed on to touch it again after a lighted match had been applied to some it was drinking.

Two carriage horses, which made a point of stopping at the foot of every hill, and refused to proceed in spite of every punishment, were considered beyond cure, but it was suggested at last that several horses should be attached to the back of the carriage, and being put into a trot be made to pull the refractory horses backwards.—The result was perfectly successful; for thenceforth they faced every hill with speed, and were not to be restrained till they reached the summit. A dog which had been beaten while some musk was held to its nose, always fled away whenever it accidentally smelled the drug, and was so susceptible of it, that it was used in some psychological experiments to discover whether any portion of musk had been received by the body through the organ of digestion. Another dog, which had been accidentally burned by a lucifer match, became angry at the sight of one, and furious if the act of lighting it was feigned.

There are, besides, so many instances recorded of even higher degrees of intelligence, that it is impossible to deny that animals arrive at knowledge of cause and effect; Strende, of Prague, had a cat, on which he wished to make some experiments with an air pump; but as soon as the creature felt the exhaustion of the air, it rapidly placed its foot on the valve, and thus stopped the action. A dog having a great antipathy to the music of the violin, always sought to get the bow and conceal it. The well known story re-



corded by Plutarch proves the application of accidentally acquired experience. He says that a mule, laden with salt, fell accidentally into a stream, and having perceived that its load became thereby sensibly lightened, adopted the same contrivance afterwards purposely; and that, to cure it of the trick, its panniers were filled with sponge, under which, when fully saturated, it could barely stagger.—(*Passions of Animals.*)

#### PHYSIOLOGY OF DEW.

Dew is a dense, moist vapour, falling on the earth in the form of mizzling rain, while the sun is below the horizon. The most plentiful deposits occur when the weather is clear and serene; very little is deposited when the weather is not so. It is well known, likewise, that a reduction in the temperature of the air, and of the surface of the earth, always accompanies the falling of dew, the surface on which it is deposited being, however colder than the air above. The phenomena admit of an easy and elegant explanation from the well known effect of the radiation of caloric from bodies. This radiation constantly taking place in all bodies, it is obvious that the temperature of any body can remain the same only by its receiving from another source as many rays as it emits. In the case of the earth's surface, so long as the sun remains above the horizon, it continues to receive as well as emit heat; but when the sun sinks below the horizon, no object is present in the atmosphere to exchange rays with the earth, which still emitting heat into free space, must consequently, experience a diminution in its temperature. Thus the earth becomes not only many degrees cooler than the superincumbent air; and, as the atmosphere always contains watery vapour becomes condensed on the cold surface; hence the origin of dew, and if the temperature of the earth is below thirty-two degrees, of hoar frost. And, since the projection of heat into free space takes place most readily in a clear atmosphere, it is under the former condition that dew and hoar frost are formed; for if the radiant caloric, proceeding from the earth is intercepted by clouds, and interchange is established, and the ground retains nearly, if not quite, the same temperature as the adjacent portion of the air. Whatever circumstances favour radiation, favour also the production of dew; and, accordingly, under the same exposure, dew is much more copiously deposited on some surfaces than on others. Gravel walks and pavements project heat and acquire less readily than a grassy surface. Rough and porous surfaces, as shavings of wood, take more dew than smooth and solid wood. Glass projects heat rapidly, and is rapidly coated with dew. Bright bodies attract dew much less powerfully than other bodies. Dew acts an important part in the processes of agriculture, and in the nutrition and growth of plants. Large quantities of the most active agents escape from the earth during the processes of decomposition and evaporation, in the shape of gases, and these combined with the aqueous vapour are deposited by the dew on the earth, or on the plants, and in either case are

available to nutrition. Hence the advantages of frequently stirring the earth, and keeping the surface in a pulverized and absorbing state. In some parts of the world it rarely rains, but the dews are so copious, that vegetation does not seem to suffer from the want of water. Spreading a substance, no matter how flimsy, as a thin cloth, over vegetables, will preserve them from severe frosts; it is not allowed to touch them, acting by intercepting the heat. Every one has observed that plants liable to destruction by frost, remain green much longer under the shade of trees than when exposed. Thus potatoes or anything else planted in an orchard, will be unhurt by frost as far as the branches of the trees extend while the tops in the uncovered spaces will be wholly prostrated.

#### SUGAR FROM INDIAN CORN AND OIL OF VITRIOL.

We learn from the American Artisan that a patent has been granted Mr. Geo. Reily, of New York city, for a process which is thus described:

A quantity of corn meal is placed in a boiler, to which is added nearly an equal quantity, by measure, of water, together with a small proportion of oil of vitriol, or sulphuric acid. The mixture is then boiled at a very high temperature, when common brown sugar is produced, held in solution, of course, with the acid. A quantity of common chalk is now thrown in, which has the effect to remove the vitriol from the sugar, the vitriol uniting to the chalk, and falling with it as sediment to the bottom of the boiler. The liquid sugar is then drained off into another vessel, boiled down to molasses, and finally crystallized and clarified in the usual manner. Though sugar is produced, yet the nature and strength of the vitriol is not altered, neither is the original quantity diminished. The same vitriol would, therefore suffice to convert an indefinite amount of meal into sugar.

The Artisan says the process is no more strange than the phenomena presented by the combustion of a tallow candle. How few know that a tallow candle is, in effect, a gas light, the melted tallow, or carbon, being raised by capillary attraction to the centre of the flame, which being hollow forms a retort wherein the tallow is subjected to an immense heat, and thus converted into illuminating gas, in precisely the same manner as the carbon in the huge retorts at the gas manufactory is turned into gas.

#### SUBMARINE TELEGRAPH COMPANY.

At the usual half-yearly meeting of this company, held in London, on Tuesday, 7th Dec., Lord De Mauley presiding, a very favourable report of the affairs of that company was read by the secretary. After relating the advantageous arrangements entered into with the Dover and Calais Company, and the intended amalgamation with the Belgium Submarine Telegraph when opened to the public, the report concluded by stating that "the receipts of the first six months

working of the submarine telegraph between France and England enabled the managers to pay a dividend of 5 per cent. per annum on £85,000 (the capital of that company,) and since that period the amount of business has been almost doubled, while the expenditure, owing to the very beneficial agreements entered into for the transmission of messages from Cornhill to Calais, by the subterranean telegraph, in conjunction with the submarine telegraph has been greatly diminished. The report was unanimously adopted, and the retiring Directors, Lord De Mauley, Sir James Carmichael, Mr. F. Laing, and the Hon. F. Cadogan, were re-elected, after which the meeting adjourned.

The following towns in the Netherlands have just been connected with Great Britain by means of the submarine telegraph wires:—Amsterdam, Breda, Rotterdam, Haarlem, Dordrecht, and La Haye, &c.

#### RESPECT FOR THE AGED.

THERE is something venerable in age. In all nations the highest respect has been paid to it. The hoary head, says Solomon, is a crown of glory, if it be found in the way of righteousness. The patriarchs were a kind of Lares among the tribes of their descendants. Among the Egyptians the young were obliged to rise up in the presence of the old, and on every occasion resign them the honorable seat. The Spartans borrowed this law from them, and rigidly enforced it among their youth. They never thought of its "breaking the spirit" of their rising warriors to require of them this submission. Job sets it down as a deplorable degeneracy among his people, that they who were younger than he, held him in derision. It stands imperishably recorded as one of Heaven's high commands, that honor is to be given to father and mother. This is to the command "with promise," a promised blessing to those who obey but an implied curse, yea, a cutting off from the land to these who disregard it. It has been supposed that our republican institutions are not favorable to the growth of this spirit.

There is more need, then that it be assiduously cultivated. The mind even in infancy should be deeply imbued with it.—And "venerate the aged," should be, with our whole people one of the fixed maxims of life, no one allowing himself any departure from it.

#### VICTIMS OF INTEMPERANCE.

The following melancholy accident is from the *London Free Press* of Thursday last. An inquest was held by Dr. Wanless, on the body of John Armstrong, found lifeless on Saturday last. It appeared that on the previous Thursday he had been drinking at John Willey's tavern on the Egremont Road, Adelaide. It is stated that being intimate with the keeper of the house, he had been in the habit of helping himself to liquor, which it is supposed he had done on the present occasion, and then started for his home, while the inmates of the tavern were engaged in some out door occupation. The night was dark and rainy, and it appeared from the tracks made that after proceeding some distance he had endeavored to trace his way back to the tavern; when he had fallen. The body was found frozen; with marks of

violence on the face, but only such as might have been occasioned by the fall, and not sufficient to cause death. The verdict attributes his death to intemperance and exposure to the weather. He leaves a wife and children.

#### GIGANTIC SEA-WEEDS.

On the north-west coast of North America, there is a tangle, named *Nereocystis*, having a stem which measures, when full grown, 300 feet in length, and bears at its extremity a huge float six or seven feet long, shaped like an enormous cask, and crowned by a tuft of more than 50 forked leaves, each of them from 30 to 40 feet long! Among this submarine foliage the sea-otter lies in wait for its prey, and when tired delights to rest and sleep on its enormous bladders. Yet all this mass of vegetation is moored by a stem as thin as a whip-cord. The Aleutians use these thread-like stalks as fishing-lines. Prodigious as are the dimensions of this "sea-otter's cabbage," (the name by which it is popularly known) they are surpassed by those of the *Macrocystis*, a sea-weed exceedingly remarkable on account of its extensive range, being distributed along the American shores of the Pacific from the Arctic to the Antarctic Oceans. This astonishing alga grows to a length of nearly 1,000 feet. Such giants strike the beholder with wonder. Not less calculated than they are to excite our admiration are the dwarfs and atoms of vegetable life that cluster around them. Few forms of organized beings are more delicately beautiful than many of the smaller sea-weeds, and the study of them with the aid of the microscope is a source of never-failing delight to all who engage in it.

#### ELECTRICITY: ITS INFLUENCE IN VITAL PROCESSES.

A correspondent, "W. G." sends us an essay on this subject, which, however, is, in the main, neither so new nor so conclusive as he appears to regard it. Between some of the phenomena of life and some of those of electricity there are certainly strong and beautiful analogies; but there are the like analogies amongst the phenomena of electricity, heat, and life; and yet it cannot be decisively ascertained that even these are identical, far less electricity and life. Nevertheless, that all three—electricity, heat, and light, are intimately associated with vital action, there cannot be a doubt. With these few introductory remarks, we give, without further comment, what we regard as the strongest points in the essay alluded to:—"May not that great binding chain of the universe—that universal power—that wonder-working principle, whose intensity continue; the same at all accessible distances from the earth's surface—'electricity'—be also the origin and universal cause of vitality and life, both animal and vegetable, and by which the instantaneous action of thought and feeling is telegraphed throughout the animal frame? Let us inquire; and by way of illustration we will take an acorn and an egg. Now, it is well known that neither an acorn nor any other seed will germinate if kept dry, nor will an egg produce a chicken at the common temperature of the atmosphere (at least in this country), but both will inevitably perish if their position be not changed.....If the acorn, or a grain of wheat or any other plant, be buried in moist earth, all the requisite conditions necessary to its growth are fulfilled, because we surround the seed with the means from whence the nutriment for the organisation and construction of the plant is derived;



and the electric circuit being completed by that simple act, such nourishment is distributed by the circulating current generated as has just been pointed out; and this electro-chemical process constitutes in fact the vitality of plants. The suspended vitality of seeds may be regarded as analogous to the broken galvanic or electro-telegraphic circuit in which the electrical action is suspended."—*Correspondent of the Builder.*

### THE CENSUS—STATISTICAL COMPARISONS.

The following interesting comparative tables have been furnished to the press by the Secretary of the Board of Registration and Statistics :

#### WHEAT.—UPPER CANADA.

	Bushels	To each inhabitant.
Wheat crop of 1841 was	3,224,991	or 6.60
Do. 1847	7,558,773	13.45
Do. 1849	9,705,082	12.08
Do. 1851	12,692,842	12.22

#### LOWER CANADA.

Wheat crop in 1843 was	942,832	or 1.36
Do. 1851	3,075,868	3.46

#### UNITED STATES.

Wheat crop in 1839 was	84,832,272	or 4.96
Estimated by		
Patent Office 1847	114,245,500	5.50
Crop of.....1849	100,685,637	4.33

In order, however, to institute a fairer comparison let us divide the States into 3 classes, viz. :

#### 1st—States growing over 6 million bushels.

	Bushels.	Population	Bushels per head
Pennsylvania	15,367,691	2,311,786	6.25
Ohio.....	14,487,351	1,980,408	7.32
New York...	13,132,438	4,148,182	3.16
Virginia.....	11,332,616	1,421,661	7.20
Illinois.....	9,414,575	851,471	11.06
Indiana.....	6,214,458	988,416	6.29
Total....	69,847,189	11,701,924	5.97

#### 2nd—States growing over 1 and less than 6 million bushels.

Michigan....	4,925,889	396,654	12.39
Wisconsin....	4,386,131	305,191	14.03
Maryland....	3,494,681	583,031	7.71
Missouri....	2,981,652	682,043	4.38
Kentucky....	2,140,822	982,405	2.15
N. Carolina..	2,120,102	868,903	2.45
Tennessee....	1,619,381	1,002,625	1.61
New Jersey..	1,601,190	481,555	3.27
Iowa.....	1,530,581	192,214	7.96
Georgia.....	1,088,534	905,999	1.21
S. Carolina..	1,066,277	669,507	1.60
Total....	27,865,240	7,078,131	3.93

#### 3rd—The remaining States and Territories.

	Bushels.	Inhabitants.	Each.
	2,791,470	4,466,246	0.63
Total....	100,503,899	22,246,301	4.53

#### Increase :

U. States 1839—84 823,272 bushels.

" 1849—100,503,899 "

15,680,627 or 18.49 per ct. ten yrs.

U. Canada 1841—3,221,991 bushels

" 1851—12,692,852 "

9,470,861 or nearly quadrupling itself in 10 years.

	Bushels.	Population.
Pr. Ed. Island, 1847	219,787	62,678 or 3½
Newfoundland, 1850	297,157	276,117 or 1.08
New Brunswick, 1850	206,635	193,800 or 1.06

The Eastern States in 1849 raised 1,090,997 bushels, population 2,668,106, or 0.41 each.

The population of Upper Canada is 952,004, and allowing 5 bushels for each, 4,760,020 bushels.

For seed at 1½ bush. per acre 1,173,173 "

Leaving for export.....5,091,305  
6,761,668  
More than sufficient to supply the consumption of the whole Eastern States.

Were the population of Lower Canada to consume flour at the given rate it would require:—

890,261 at 5 bushels each.....4,451,305.  
Seed.....640,000

Grown.....5,091,305  
3,075,868

Leaving a surplus of wheat in Canada 4,746,231 bushels, or at 4½ bushels for each to 1,054,178 barrels flour.

### HOW TO SECURE AND KEEP APPLES.

We extract the following judicious suggestions from an article on "Work for the Month," by the editor of the *Me. Farmer* :

The first requisite in the preservation of apples is to avoid bruising them. The slightest bruise will induce rotting. It is said that Wm. Pell, the great orchardist of New York, who ships so many apples to England, took some of his apples and merely *dented* them with his thumb. He marked them, put them in barrels with the others and wrote to his agent in England to whom they were sent, to observe what effect this slight pressure had upon them. It turned out that these apples began to rot in the very spot of the indentation, and became spoiled in consequence.

Every one who has paid any attention to the subject, knows that the decay of a bruised apple commences in the bruised part.—Why shouldn't it? The juices of the apple are nicely packed away by nature along with the flesh or pulp, in little cells nicely lined or covered by a delicate membrane which keeps everything in its place and preserved for its time of maturing—crush these and you let everything loose and decay will take place in everything else in like circumstances.

In order, therefore, to preserve apples as long as possible, it is absolutely necessary that there should be no bruises upon them. They should be handled carefully after being picked. Some will pick them from the trees very carefully, and then handle them very roughly afterwards. They will pour them from the baskets on to the ground,

or more properly speaking, "*sluice*" them out of the baskets into the barrels with a violence enough to bruise them almost as badly as if they had dropped naturally from the trees.

It is best if it can be done conveniently, to place apples, after being picked, in a pile in some shed or large cool room, and let them sweat, as it is called. This sweating is nothing more than the exudation of watery particles through the skin. The apple, in consequence of this loss, shrinks a little and becomes drier, and consequently there will be less tendency to rot. They may then be wiped dry, and packed carefully in barrels and headed up. The barrel should then be kept in a dry, cool place—the drier and cooler you can keep them and not have them freeze, the better they will keep.

**TO PICKLE TOMATOES.**—Throw them into cold vinegar as you gather them. When you have enough, take them out, tie some spices in a bag, and scald them in good vinegar. Pour the vinegar hot over the tomatoes.

**THE CURATE'S PUDDING.**—To 1 lb of mashed potatoes, while hot, add four ounces of suet, and two ounces of flour, a little salt, and as much milk as will give it the consistency of common suet pudding. Put it into a dish, or roll into dumplings, and bake a fine brown.—*Lady's Book*.

**JACKSON SPONGE CAKE.**—Take one cup of flour, one cup of sugar, three eggs, and one teaspoonful of cream tartar, stir them well together, then dissolve one-fourth of a teaspoonful of saleratus in a tablespoonful of hot water, add to the cake, stir briskly and bake half an hour.

**TO PICKLE NASTURTIUMS.**—Pick them when young on a warm day; boil some vinegar with salt and spice, and when cold put in the nasturtiums; or they may be put into old vinegar from which green pickles or onions have been taken—only boil it up afresh.

**COMMON GINGERBREAD.**—Half a pound of butter, half a cupful of ginger, one pint of molasses, two pounds of flour, one tablespoonful of saleratus. Rub the flour and butter together and add the other ingredients together. Knead the dough well. Roll it out, cut in cakes, wash them over with molasses and water, and bake them in a moderate oven.

**STARCH.**—There is no better way that I have ever tried, for making nice starch for shirt bosoms, than to boil it thoroughly after mixing, adding a little fine salt, and a few shavings of a star or spermaceti candle. I have found the star or pressed lard candle, quite as good as the sperm. Let the starch boil at least ten minutes, and it will give a gloss, if neatly ironed, fully satisfactorily to the exquisite taste of a dandy.

The New York *Tribune* says:—"Mr. Joseph Beers of Keyport, has five large sheep in his flock, (of the Leicester, English breed) which he intends to have on exhibition during the continuance of the World's Fair, next Summer. The aggregate of the five sheep is 1,560 lbs., the largest being 378 lbs. in weight. The largest sheep in England, which Mr. B. has any account of, weighed 358 lbs. This large sheep of Mr.

B.'s yielded a fleece this past season, weighing 13 lbs.,—an ordinary fleece weighing from 3 to 4 lbs. The above five sheep are now in town, on an introductory excursion, and visited several of the newspaper offices, yesterday, in their farm carriage. The owner intends to keep them in good order until the World's Fair opens, when he expects that their size and weight will be somewhat increased."

The dues for Irish lighthouses are to be immediately lowered, so as to make only one sixteenth part of a penny per ton, payable by coasters. Consequently, a vessel will have the benefit of eight different lights for a halfpenny per ton. The alteration is to come into force on the 1st of January, 1853.

*Fraser's Magazine*, for December, says, "A few years ago, say even this day five years, M. Louis Napoleon Bonaparte was three years in arrear of rent in the parish of St. James. He could not pay his tailor's, or his upholsterer's, or his wine merchant's bill, or meet one half of his engagements in the city or in the West-end."

**BLACK DYE.**—For 20 yards of dark blue cloth a bath is made of two pounds of fustic (*morus tinctoria*), 4½ lbs. of logwood, and 11 lbs. sumach. After boiling the cloth in it for three hours it is lifted out, 11 pounds of sulphate of iron are thrown into the boiler, and the cloth is then passed through it during two hours. It is now aired and put again into the bath for an hour. It is, lastly, washed and scoured. Experience has proved that maddering prescribed in the ancient regulations only gives a reddish cast to the black, which is obtained finer and more velvety without maddering.

**STEAM PLOW.**—The Illustrated London News states that James Usber, of Edinburgh, has succeeded in overcoming the obstacles to the application of the steam to plowing, and completed a machine which has been successfully tested in the presence of many practical farmers, who expressed the surprise at the superior manner in which the work was effected.—The machine cost £300 and is adapted to plowing, threshing, rolling and harrowing, and travels 2,550 yards per hour, turning over 50 inches in breadth, which is equal to seven acres in ten hours, at a daily expense of 17s or 18s, which is about 2s 6d per acre, while it costs 9s to 10s to plow an acre with horses.

**RAZORS.**—Barbers often tell us that razors get tired of shaving, but if laid by for twenty days, they will then shave well. By microscopic observation, it is found that the razor from long stopping by the same hand, and in the same direction, has the ultimate particles of fibres of its surface or edge all arranged in one direction like the edge of a piece of cut velvet: but after a month's rest, the fibres rearrange themselves heterogeneously, crossing each other and presenting a saw like edge, each fibre supporting its fellow, and hence cutting the beard, instead of being forced down flat without cutting as when laid by. These and many other instances are offered to prove that the ultimate particles of matter are always in motion; and they say that in the process of welding, the absolute momentum of the hammer causes an enlargement of orbits of motion, and hence a re-arrangement as in one piece; indeed in the cold state, a leaf of gold laid on a polished surface of steel, and stricken smartly with a hammer, will have its particles forced into the steel, so as to permanently gild it at the point of contact.

—*Scientific American*.



## Poetry.

## BUTTERFLY.

Child of the Sun! pursue thy rapturous flight  
Mingling with her thou lov'st in fields of light  
And, where the flowers of paradise unfold,  
Quaff fragrant nectar from their cups of gold  
There shall thy wings, rich as an evening sky  
Expand and shut with silent ecstasy!  
Yet wert thou once a worm, a thing that crept  
On the bare earth, then wrought a tomb and slept.  
And such is man; soon from his cell of clay  
To burst a seraph in the blaze of day.

## WISDOM.

Ah! when did wisdom covet length of days?  
Or seek its bliss in pleasure, wealth, or praise?  
No: wisdom views, with an indiff'rent eye,  
All finite joys, all blessings born to die,  
The soul on earth is an immortal guest,  
Compell'd to starve at an unreal feast;  
A spark that upward tends by nature's force,  
A stream diverted from its parent source:  
A drop dis sever'd from the boundless sea,  
A moment parted from eternity!  
A pilgrim pausing for a rest to come;  
An exile anxious for his native home.

MRS. H. MOORE.

GUILT, though it may attain temporal splendor,  
can never confer real happiness.

It is stated that winter has not set in so early in the season in Iowa during the last twelve years as it has this year. Snow has covered the ground since the 10th day of November.

A Lecturer addressing an audience contended with tiresome prolixity, that art could not improve nature, when one of his hearers, losing all patience, set the room in a roar by exclaiming, "how would you look without a wig?"

A new society, says an exchange paper, is in formation, to be called the "Total Abstinence from Physic Society," whose motto is to be "Beef, Water, and Benevolence." All its members are expected to grow fat and facetious.

PRECIOUSNESS OF TIME.—Coming hastily into a chamber, I had almost thrown down a crystal hour-glass: fear, least I had, made me grieve as if I had broken it; but alas! how much precious time have I cast away without any regret! The hour-glass was but crystal, each hour a pearl; that but like to be broken, this loss outright; that but casually, this done wilfully. A better hour-glass might be bought; but time lost once, lost ever. Thus we grieve more for toys than for treasure. Lord, give me an hour-glass, not to be by me, but in me. "Teach me to number my days." An hour-glass to turn me, "that I may apply my heart to wisdom."—*Fuller's Good Thoughts.*

A CHRISTIAN BURIAL PALACE.—We will not call it, with the Egyptians, a place of "Eternal Habitations," because the Christian's only everlasting tabernacles are those "not built with hands eternal in the heavens."—The prophetic faith even of the half-instructed Hebrews, catching a beam of truth from the latter revelation they waited for, named their burial places, "homes of the living." I like the name chosen by the Moravian brethren, "Fields of peace," fit designation for the final halting ground of their quiet, affectionate lives:—and that of the German's "God's Harvest Field." Our own word "Cemetery," is Christian; for it means literally a sleeping place,—and is so justified by that touching announcement from Jesus, "Our friend Lazarus sleepeth."—*Huntington.*

## EDITOR'S NOTICES.

## RECEIVED.

"Baron de Longueill, on Bone Manure."

"Mr. Knowlson's Address."

"Mr. W. H. Lotham."

"THE OXFORD GAZETTEER;" by T. S. Shenston, of Woodstock.

We are indebted to the Warden of the County of Oxford, for a copy of this work, which appears to have been compiled with much care, industry and judgment. From the hasty glance we have been able to take of it, it appears to contain in a systematic form, all that is of importance to know respecting the County of Oxford, and we think the example is well worth following by other counties. The agricultural census and other valuable statistical information seems very complete. It seems a pity that so much of this kind of information, which is obtained by much labour and cost to the country, should be comparatively useless for want of publicity. In this respect alone the author of this Report is entitled to the thanks and encouragement of the public. The *Oxford Gazetteer* consists of upwards of 200 pages, neatly bound in cloth, containing a well executed map on a large scale of the county, with a good likeness of the Hon. Francis Hincks, the Member for the county; and may be had, *postage free*, by enclosing *one dollar* to the author, at Woodstock. We shall probably hereafter notice more in detail some portions of this work. In the meantime we cordially recommend it to the attention and support of the public.

TRANSACTIONS OF THE NEW YORK STATE AGRICULTURAL SOCIETY FOR 1851.

We are indebted to B. P. Johnson, Esq., for another Annual Report of this important Society. Its contents are varied, and embrace many subjects of the greatest moment to the farmer. A cursory glance, which as yet we have only been able to give, convinces us that the present volume is in no way inferior to its predecessors, and that it will be read with both pleasure and profit by all who take an interest in the progress of theoretical and practical Agriculture. It consists of nearly 800 pages, with a number of illustrations, and has appended to it a very excellent report on the Great London Exhibition, by the able Secretary, Mr. Johnson, who was deputed by the State of New York, as an agent to the World's Exhibition. Mr. Johnson's performance occupies another two hundred pages, and contains several en-

gravings. Beside the Annual County Reports and full particulars of the financial state of the Society, which is, we are happy to observe, highly satisfactory, the volume contains several valuable prize essays, and an address delivered before the annual meeting of the Society, by the talented and lamented Norton. Rarely do we meet with advice so sound and practical, mingled alike with cautious and encouragements so necessary, as in this last production. The Addresses of the President, J. Delafield, Esq., and Hon. S. Douglass, will be perused with no ordinary interest; and the elaborate article on a general view and agricultural survey of the County of Madison, is a paper that would of itself give an enviable character to the transactions of any Agricultural Society in any country of the world. We shall advert hereafter to this valuable storehouse of agricultural information.

Letters



Patent.

TIME &amp; LABOR SAVED ARE MONEY EARNED

**B. P. PAIGE & Co., SOLE PATENTEES.**

THE Subscribers having had secured to themselves the exclusive right to Manufacture and vend to others to use, in the Territory of Upper and Lower Canada,

**SEVERANE'S PATENT IMPROVED HORSE-POWER AND THRASHING MACHINE,**

One of the most Valuable Machines ever invented for saving labor and time, respectfully inform the Public that having greatly enlarged their Extensive Establishment on Wellington Street, now extending through from Prince to George Street, which will give them ample room and accommodations, they trust, to enable them hereafter to supply the whole Farming Community of Canada, with a machine that will thrash and clean more grain in a day with less expense and more neatness than any other Thrashing Machine in use, and requiring but Two Horses.

We beg leave to say to our Customers & Friends, that we are again prepared to furnish those in want of Thrashing Machines, with an article superior even to those heretofore manufactured by us. Our long experience in making, and the very liberal patronage we have enjoyed in the sale of our Machines, has, together with a constant determination to produce an article that will never fail to excel all others, caused us to watch carefully all the improvements that could be made from time to time, until now we feel confident in saying, that for durability, neatness of Work and amount of it they can do, our Thrashing Machines are unequalled by any in use, and while the grain is thrashed clean, and none of it broken or wasted, it is at the same time perfectly cleaned, fit for the mill, or any market.

One of the above named Machines, will give a man, with proper diligence and attention, an income of from five to eight hundred dollars a year, as ap-

pears by the statements of a great number of gentlemen, who thrashed last season, and have kindly given us permission to refer customers to them for information in regard to the operation of our Machines.

Whereas, Letters Patent were obtained, bearing date March 5, 1849, on said Machine, the public are cautioned against purchasing, using, and manufacturing any imitation article, as all infringements will be dealt with according to the law of the land. All the genuine Machines will be accompanied by a Deed signed by B. P. PAIGE, the owner of the right, giving the purchaser the right to use or transfer the same.

All orders addressed to us, or to **WILLIAM JOHN-SON**, our Agent, will be promptly attended to. Machines shipped to any Port in Upper or Lower Canada, and every one warranted to be as good as recommended.

B. P. PAIGE &amp; Co.

The Agents for the sale of the above Machine in Canada West are as follows:—Workman, Woodside & Co., Toronto; Joswell Wilson, Ancaster; Horatio A. Wilson, Westminster; M. Anderson & Co. London; Mr. Samuel Young, Asphodel. 66s 6m  
Montreal, August, 1852.

**Important to Stock Breeders!****FOR SALE,**

A VERY superior Four-Year Old BULL, bred from a thorough-bred Durham Bull, and thoroughbred imported Hereford Cow.

For further particulars, apply, if by letter (post paid) to the subscriber,

JOHN IRELAND.

Crosby Corners, P. O.,  
Markham, Canada West,  
December 23rd, 1852.

tf.

UNIVERSITY OF TORONTO.

**Theory and Practice of Agriculture.**

PROFESSOR BUCKLAND'S COURSE OF LECTURES, embracing the History, Science, and Practice of Agriculture, will be given during Hilary Term, commencing January 10th, 1853. Three Lectures a week. Fee, \$1 for the Course.

**The Canadian Agriculturist,**

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, to whom all communications are to be addressed, is published on the First of each month by the Proprietor, *William McDougall* at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

**TERMS.**

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Subscriptions always in advance, and none taken but from the commencement of each year. The vols. for 1849-'50-'51, at 5s. each, bound.

N. B.—No advertisements inserted excepting those having an especial reference to agriculture.—Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.



THE  
**CANADIAN AGRICULTURIST**  
AND  
**Transactions**  
OF THE  
**BOARD OF AGRICULTURE OF UPPER CANADA.**

VOL. V.

TORONTO, FEBRUARY, 1853.

NO. 2.

AGRICULTURAL ADDRESS.

The annual meeting of the Township of PORTLAND AGRICULTURAL SOCIETY was held at Spike's Corners January 19, 1853, when the following address was delivered by ANGUS CAMERON, Esq., of Kingston, the President of the County Society. The practice of delivering prepared addresses at meetings of this kind, is, we are glad to observe, on the increase, as it tends to give a character and usefulness to the proceedings, which they could not otherwise possess. There are many points in Mr. Cameron's very useful and practical lecture that have a general interest and application:—

GENTLEMEN,—The indisposition which has hitherto prevailed amongst practical farmers generally, in this section of the country, to become members of Agricultural Societies, is matter of regret to the few of them who entertain high opinions of the advantages which such societies are capable of affording. This indisposition is but too plainly verified by the facts, that while some of the Townships maintain no society of this description, the annual exhibitions of those which do, are supported and attended but by a small proportion of the farming community. The County Show, held in the month of October last, although a great improvement on past meetings of the kind, as far as regarded horned cattle, sheep and swine, was quite a falling off in many respects, and especially as regards the number of agriculturists in attendance, and in the quantity of grain, dairy produce, and home wollen manufactures, although the amount distributed in premiums exceeded the average of former occasions of the kind. The office Bearers of the County Society, for the past year, earnestly desirous of a change for the better in this respect, are now making every exertion in their power to awaken a more lively and extended interest in the great work of agricultural improvement in the several townships throughout the County. It has frequently been urged as a plea for not having joined such societies in times past, that the provisions of the Agricultural Society Act were not known generally in the country, and especially that section which limited the period for subscribing as members, of township and county

societies, to the last days of January and February. To remedy this in future, the act has been put into possession of the several township authorities, and there is yet good time for the people in each locality to avail themselves of its advantages for the current year. It has also sometimes been assigned as a reason for refusing to become members, that although the intention of the law was worthy of approbation, the management of the society was bad. In reply to this it may be stated that it is very difficult, if not impossible, to please all parties in a matter of this kind. Improvement in this respect may perhaps be required as much as in our farm practice, but certainly it is not the way to improve in management of any society to give it up altogether. The people have the management in their own hands, as once a year they select their office-bearers; the rules and regulations are subject to such alterations and amendments as the members may think proper, so that past errors may be avoided, and progressive improvement from new sources of information, and from practical experience, may be the result.—Those who the most clearly perceive the errors in the past management, would be conferring a benefit on the country by being present at all the deliberations and meetings, with a view to secure all desirable amendment. On the same principle on which agricultural societies have been pronounced by competent authority, to be advantageous to the farming interest in the three separate portions of our mother country, we may safely admit they could be rendered so in Canada. There the practical tenant farmer, under heavy rent, the man of science, and the wealthy landlord, contribute to their support. Professor Johnston, in his "Notes on North America," says of that continent that "as to the condition of agriculture as an art of life, it cannot be denied that in this region, as a whole, it is in a very primitive condition." He also says that "little knowledge of improved agriculture has hitherto been diffused in Upper Canada. In revenge, the farming class are not, as a body, regarded with much estimation by the other classes of society. They do not assume their proper position among a community where, if they only knew how to use it, all political power is in reality in their hands."

It would serve no good purpose, on behalf of the farmers of Canada, to deny this charge on paper; it is to be hoped, however, that ere many years revolve a different account of our condition will be legibly written, more generally than at present, on the face of our farms with the plough corroborated by the presence of comfortable and convenient housing for man and beast—improved breeds of live stock, in good keeping—a more general use of labor-saving implements—more attention to a better system of operations, and the rotation of crops—draining and manuring of the soil—all of which, agricultural societies, wherever maintained, have been instrumental in producing.

In the following quotation from the same author, it will be observed that he anticipates at an early day a better state of things in Upper Canada than he witnessed on his visit here in 1849:

“The superior class of settlers, of whom so many are scattered over Upper Canada, will greatly facilitate the adoption of such means of improvement as are usually employed by Agricultural Societies.”

This anticipation of improvement, by means of Agricultural Societies, is worthy of our attention, and is a strong recommendation to every farmer, especially, if not to every resident of the Province, to countenance by his presence, and to aid by his subscription the formation and proceedings of such societies. To this learned and respected author we are more indebted for having thus pointed out to us our wants, and hopefully directing us towards the means of supply, than if by a more flattering account he had induced us to abate our exertions.

The truth of the Professor's remarks is verified in the following extract from “Scobie's Almanac” for 1853, showing the average produce per acre in Upper and Lower Canada, omitting the fractions:—

	U. C. Bushels.	L. C. Bushels.
Wheat, - - -	14	7
Barley - - -	20	15
Rye, - - -	12	7
Pease, - - -	14	7
Oats, - - -	25	15
Buck Wheat, - -	14	10
Indian Corn, - -	24	17
Potatoes, - - -	64	60
Turnips, - - -	212	95

It is difficult to account for the smallness of this average yield per acre in any other way than by admitting that the average of our farming practice is bad; or by libelling our climate or soil, if not both, and asserting that in one or both lies the deficiency—and this allegation is annually refuted in the abundant crops raised by the skilful portion of our farmers throughout the Province. The traveller very often sees, in the most fertile and best cultivated parts, striking illustrations of the difference between the good farming and the bad on adjoining lots of nearly equal virgin quality; the one farmer rendered prosperous and affluent by the luxuriance of his crops, while his neighbor, in poverty, blames the climate and soil.

The proceedings of Agricultural Societies, their exhibitions and competitions, and the public decisions of their judges, have a tendency to improve the judgment of all attentive observers on such occasions; and to farmers who are dealers in live stock and farm produce, this alone is of importance, as enabling them the better to know the good and bad points of their own properties, as well as those of others. This improvement of the judgment in discerning the better from the worse, leads to an appreciation of excellence, and that appreciation by farmers encourages societies, as well as enterprising individuals, to bring superior animals, seed and implements within their reach. One farmer alone, however, desirous of improving his live stock, can seldom afford, in the present state of our progress, to purchase and keep up a first-rate male animal—but in a locality where excellence is duly appreciated, the demand from his neighbors might render him good returns for money thus invested; and at the year's end it is an important addition to the value of farm stock that superior males had been supplied to all the female breeding animals; indeed, few of the farmer's outlays yield so profitable a return. To cause extensive and minute inspections and comparisons of whole farms, and of the various methods in practice upon them, and to sum up the several results, duly reporting thereon for the public information, as practised by many societies, cannot fail to excite emulation, not only on the part of those immediately concerned—the examiners and those examined—the society to which they belong, but also throughout the whole neighborhood; and in no branch of their varied duties have Societies done more good in the mother country than in the degree of perfection to which they have been mainly instrumental in bringing the construction of the plough and thus improving its operations.

The ploughs generally in use in this vicinity at present may have been fit in truments when there were no fields clear of stumps and other obstructions, and even yet may be indispensable for some portions of many farms; but they are unfit to cut and properly turn over the furrow slice as required on clear sod land of an even surface; as proof of this, witness our County Ploughing Match, in October last. The ploughing to which was awarded the first premium, was even in the estimation of the ploughman, very bad; the fault evidently was not his, but that of the implement; each furrow slice standing nearly upright, with an open space between them; while all admitted the workman understood his business well. One good result is hoped from that day's ploughing, as the farmers there generally agreed that we have not the right sort of ploughs for good work in clear fields and doubtless many will turn their attention to quarters in which they may be found.

The absence of a good plough factory, within a convenient distance, has greatly retarded our progress hereabout in ploughing; if we had some of the ploughs made by the Messrs. MacSherry, near Queenston, or by the Messrs. McTrish, of Bowmanville, the workmanship at our ploughing matches would soon show a dif-



ferent finish. That these remarks on the plough makers and ploughs supplying this section of the country for some time back, may not appear unfounded, it may as well be stated that many farmers have, during the last season, made great exertion to find in Kingston or the surrounding townships, a plough capable of cutting a rectangular furrow slice, nearly 6x9 or 7x10 inches, and turning the same properly over close against the preceding one at the desired angle of 45 degrees, leaving each exposed face to measure nearly the same, say six or seven inches. Something near this is insisted on at ploughing matches, and should any vender of ploughs consider himself wronged by these remarks, or deem them untrue, he will be entitled to reasonable satisfaction, as well as an increased demand for his ploughs, or his giving proof that they are fit to do the work as required. The decision of judges in awarding premiums for the best ploughs at societies' exhibitions, without any trial of the work they are capable of performing, may sometimes happen to be right, and may also often happen to be wrong; the surest test of their goodness is a trial in the ground by a competent ploughman, and a steady team; and so often as mistakes of this kind are made, injustice is done to the more deserving mechanic, the sale of the inferior article is promoted, and that of the superior is discountenanced. And this injustice is not only the bad consequence of these erroneous decisions on ploughs—they also mislead farmers to purchase the worse instead of the better implement; and have a tendency to lessen the confidence of both mechanics and farmers in the proceedings of such societies. The ordering of ploughs from a great distance, although perhaps a better alternative than to continue the use of a bad one, is by no means so safe for the farmer as a home supply, if equally good, because where the mechanical skill is wanting to make a good plough, it may also be wanting to keep in order, should it happen to meet with an accident; from this want of mechanical skill, so much felt in this neighborhood, the utility of a society may be understood, as its exertions would be more efficacious to supply the want, than would in individual efforts. It may be remarked by some that as our societies have been for many years in operation, they should before now have supplied this want; but again, how can practical farmers expect to find their wants thus supplied unless they take some pains and contribute the needful means to keep such societies in successful operation; which as is stated in the out set, they are very apathetic in doing. Let this now be remedied as soon as we can, by each farmer contributing his dollar towards the society of the township to which he belongs, and another towards the County Society. Let all attend their meetings, elect officers and directors in whom they have confidence, and under the new act of Parliament, adopt such rules and regulations as to the majority may seem best suited to promote the great object, not only of agriculture but of general improvement; not narrowly looking for an immediate cash return in premium, but liberally contributing their mite to the support of an

association, which is designed to be instrumental in disseminating a spirit of improvement.

The meeting was very attentive during the delivery of the address, and the proceedings highly satisfactory to all present. Thanks were then voted unanimously to Mr. Cameron for the pains taken by him in visiting the meeting, and for the practical character of the lecture which he had delivered, and the meeting adjourned.

J. SPIKE, President.

A. SPIKE, Secretary.

#### CULTIVATION OF THE GRAPE.

In the last number of the *Plough*, an interesting description is given of Dr. Underhill's vineyard, the largest in the State of New York, near Sing Sing, on the Hudson. It consists of about 30 acres; three-fourths are planted with the *Isabella*, the remainder with *Catawba*, *Alexandria*, *Norton's Seedlings* or *Lady Grape*, *Early Black* or *York Madeira*, *Croton Cluster*, &c. The Doctor, after careful and numerous experiments, has arrived at the conclusion that the *Isabella* is the only kind admitting of safe and profitable cultivation in open vineyards in the northern States. The *Catawba* is an excellent variety, but it will not properly ripen in more than one year out of three. It is stated that the Doctor's vineyard, which is favorably situated as regards the New York market, is far more profitable than if planted with the best sorts of apples and other fruit; and the cultivation, manuring, gathering and marketing of the produce are conducted on strictly systematic principles. We have seen the *Isabella* grape flourish well in open ground, in several places of Upper Canada, and recommend it to the attention of such as feel interested in possessing a good garden.

The grape naturally covets a dry, warm soil, if a loose limestone all the better;—indeed lime in some form seems essential to the grape. It is a capital practice in planting to dig deep trenches, and fill in with fresh soil, all sorts of vegetable rubbish, mixed with stones, uncrushed bones, &c. The trellis system is the neatest and best, admitting of easy culture either by the plough or hoe, and exposing the leaves and fruit to the full action of sun, light, and air—points of indispensable importance. In both spring and summer pruning, "Spare the knife and spoil the grapes," is known by all practical cultivators to be a sound aphorism. The cutting away of leaves, however, for the purpose of admitting light and heat to the fruit, should be very cautiously performed; but in order to secure bunches of large size and of the finest flavor, it is of importance to keep down the number, by the early removal of such as are too thick and inferior. Large berries can be obtained by carefully removing by the fingers, early in the season, all the smaller ones found on the same bunch.

## CAVAN AGRICULTURAL SOCIETY.

We have been requested by the Directors of this Society to publish the Address delivered by the President at its late annual Exhibition. The day was wet and unfavorable, yet the number present was very considerable, and the display of horses really good. The show of sheep was fair, and quite an extensive assortment of *domestic woollens* was exhibited, much superior to anything seen before. There are many points of the address that will interest our readers generally.

## ADDRESS

OF JOHN KNOWLSON, ESQUIRE,

PRESIDENT OF THE CAVAN AGRICULTURAL SOCIETY.

GENTLEMEN, — (For I believe there are no Ladies present, having been prevented from attending, no doubt, from the unfavorable state of the weather, which is much to be regretted.) In conformity with a recently adopted By-law of your Society, the duty of delivering a written address on subjects connected with the science of Agriculture, devolves upon me as your President; but I am sorry to say that I come before you very badly prepared for such an important task. I might begin and tell you that I have been pressed for time, and make other, what may appear to me very valid excuses, yet I confess that although I should be telling you the truth, and nothing but the truth, these would not justify me in your eyes for having neglected a duty which you had a right to expect me to perform; therefore, I consider it more creditable to plead guilty at once of a dereliction of duty, rather than attempt an excuse, and so throw myself on your mercy, ready to submit to whatever penalty the Directors of your Society may think proper to inflict. These ill-digested and hurried remarks I only commenced to put together last evening, and concluded this morning on the Show ground; therefore what I have to say is quite an abridgment and curtailment of what I had previously intended, so that I fear it will hardly merit the appellation of an "*Agricultural Address*." My *will* to serve you on this occasion, I assure you was good, but as I have before hinted, I have no reason to expect you to accept the *will* for the *deed*, although I dare say you will agree with me that "*wills*" are sometimes looked upon as favorably as "*deeds*"; for instance if any of you were to inherit a nice, hundred acre, cleared farm, with substantial and comfortable buildings, and other appurtenances, I feel satisfied you would think as highly of the testator's *will* as you would of a *free deed* given by a friend, of a hundred acres covered with hemlock or tamarac swamp; so you see that *wills* are really not always to be despised. However, do not let me lead you to suppose that when I said my *will* to serve you was a *good will*, that it ever entered into my head to "*will*" any of you a farm; no, no such thing I assure you, but my intention was in all sincerity to impart the best information in my power, in order to instruct and enable you to improve the farms you already possess; and if I shall be able to say anything at all that

may give me the least claim to your pardon for not doing better, for not taking more time and care, as I ought to have done, in preparing this address, I shall feel myself your very grateful servant. Although, gentlemen, I am far from being a practical farmer, yet I assure you it is always a source of pleasure to me to study the science of agriculture. I have been in the habit like many of you, of reading newspapers and various periodical publications on different subjects, and I declare to you in all sincerity, that I find more real satisfaction, read with far more zest, such papers as treat upon agricultural pursuits than in reading the matter contained in any mere political paper; for instance such papers as the *Canadian Agriculturist*, the *Genessee Farmer*, and the like, any of which may be had at the cost of about half a dollar a year, and I believe it would be to the advantage of every farmer to introduce an agricultural paper into his family; in these you read of the best system of husbandry, of the best breeds of different kinds of stock, of the most approved implements, and labour-saving machines for cultivating the soil, and reaping the crops and preparing them for market; in these you also find many valuable recipes, besides numerous useful and valuable hints well calculated to promote economy, comfort, and wealth, amongst those engaged in rural avocations; therefore I would strongly recommend every farmer to subscribe for and read attentively, an agricultural paper; and this need not prevent you from taking a well conducted newspaper for general information besides. Before proceeding farther, I would beg to be understood that what I have now to say in my imperfect and hastily got up address, is not intended by me, merely for a moment's amusement, or for no other purpose than merely filling up a portion of the time of this our exhibition day. No, gentlemen, my desire, and my intention is that the few hints I have to offer, should prove useful to you, and have the effect of producing practical results, viz., of promoting your welfare and prosperity. As I said before I am not a practical agriculturist, and therefore my remarks may be considered as worthy of but little regard. I can only say that I am presumptuous enough to persuade myself that although not a practical farmer, yet that my own pursuits do not preclude me from either making useful observations or noting down useful facts connected with farming operations when such present themselves conspicuously before me; and as I have frequent opportunities of becoming acquainted with the state of the markets for farm produce, &c., I am in some degree competent, I conceive, to impart at least a *sprinkling* of useful information; besides I think I am justified in believing that you yield some share of your deference to my judgment on these subjects, or I should not so long have been honored with your confidence by placing me at the head of your Society, therefore what more I intend to say is meant for your advantage, and offered freely and candidly. First, I would embrace this opportunity of congratulating you upon the beautiful and favourable harvest with which you have been blessed; one of the finest perhaps we have any of us ever witnessed; and such a temporal blessing coming from the hands of the Giver of every good gift, demands from us all a



pure "thank-offering" to Him who bestows upon us all we possess in this world. Let us never fail to be grateful for such favours, always remembering that He who gives them, can also either withhold them, take them away, or turn them into a curse instead of a blessing, should we fail either to appreciate or make a legitimate use of them. Which of us can properly call anything we possess our own. What individual, or what number of individuals collectively, with all their skill, all their genius, all their mere human power, can in truth say that such and such a barn full or grainary full of grain, or such a stock of fine cattle, are *their own*; that they are able of themselves, to protect them from destruction for a single moment against the power of Him who in His bountiful goodness permits them to enjoy them. The crop of wheat which you have just harvested with less hurry and fatigue, and with fewer hands than usual, is both abundant in quantity, and excellent in quality, and all that is required to crown your wishes in regard to this portion of your productions, is *good prices*; but I fear it is somewhat doubtful whether your wishes in this respect are destined to be realized. You may, I assure you, fully make up your minds that the days of protection in the British market for what has been hitherto our staple agricultural production; viz., *wheat*, have passed away, in all probability, never to return; consequently we cannot reasonably look for *much* higher prices for this article than we obtain at present, except from causes which would be by no means desirable, viz., either from *war* or a *failure of crop*, in other parts of the globe, or some cause which would entail suffering or want upon a portion of our fellow creatures, *somewhere* and therefore always to be deplored and never to be desired. Such a state of things would be similar to one of us attempting to sit down to enjoy a sumptuous or dainty repast, while we knew that our next door neighbour was perishing of starvation; therefore when we learn as seems now to be generally understood, that the inhabitants of Europe and other parts of the world have been blessed as well as ourselves with a fair yield of breadstuffs, we ought to feel thankful on their account, as well as on our own. While on the subject of the *wheat* crop, our hitherto staple farm production in Canada, I feel it my duty to give you a word of advice, for it is now becoming a question among political economists whether we should much longer look upon wheat as our staple commodity for export. I firmly believe, gentlemen, that it is high time for every farmer to turn his attention more to other products than that of wheat; indeed I might enumerate a great number of farm productions, *any* of which would not only pay you better than wheat, but would be quite certain to remunerate you well for the labour required to produce them. I will first mention the article of *butter* which not only at present commands a high price, but is likely to do so for some time to come; therefore let me advise you to pay more attention to the *dairy*, both for *butter* and *cheese*, both of which are likely to command highly remunerating prices; and above all in this department let me entreat you not only to *endeavour*, for that word hardly conveys a strong enough

meaning for some of you, (not so strong as some butter I've tasted in my lifetime) but be *determined* to make a good and superior article, in order that the character of Canadian butter and cheese may be raised and established in foreign markets. Butter at present is selling readily at 8d. per pound, and I know many farmers who have for years past realized handsome sums from the sale of this article, even when it was but 6d. per pound; they considered then that it paid them as well or better than wheat, and why it was that more attention was not paid to its production by a great many other farmers, with equal facilities, seems somewhat strange. I would next mention the article of *pork*; this is likely to pay well for some time to come, decidedly better than wheat in my opinion, and I consider it a matter for regret, and one I think of great oversight on the part of many of our farmers, that they should have allowed, during the past summer the number of their hogs to be greatly reduced by selling them to American jobbers. Every intelligent farmer, by reading an agricultural journal, and looking into the state of their markets, &c., might have easily foreseen, from the brisk demand for pork since last winter, and the prospect of an increased demand for it for lumbering operations, that the article would continue to rule high for some time, and to command good remunerating prices. But what is the fact which we have reason to deplore? Why, that many, very many, more hogs than ought to have been spared, have been sold in their lean state, taken away from the Province while many of our own farmers have not so much as one to fatten! To be plain and candid I call this bad management, or rather no management at all. But my observations in reference to keeping or being without certain animals, lead me to make even a more severe remark than this; for I am convinced that the most casual observer cannot fail to be struck with the gross mismanagement on the part of some who call themselves *farmers*. You may possibly some of you take offence at my undertaking to administer such a rebuke on your proceedings; be this as it may, what I state, I do so under an honest conviction, and with the intention of doing you good, and promoting your temporal welfare; therefore take it as you will. For instance, how many occupants of farms have I seen within the last few years who would in one season have an overstock of horned cattle, and at a time, too, when such were of but trifling value, while the surface of pasturage, and quantity of winter fodder was altogether inadequate for their support; the consequence was, that a great many of them died from starvation, and for want of proper care and attention, so that from such losses, such *thinning* of the number, and the *thinness* of the carcasses of the few that survived, the conclusions that were generally come to by their owners, (although very erroneous conclusions) were, *that it was a bad business to aim at raising Stock*, and so the following season generally found our perplexed and discomfited neighbours with scarcely a hoof at all. And then the same with regard to *hogs*; one year one of these men's farms,—mind you I do not say a *farmer's* farm,—would be literally overrun with the great number he would keep of

these animals, and when the season for slaughtering arrived in the fall, the prices, as might have easily been foreseen, proved by no means remunerating; he found that although they had devoured the best share of his potatoes, all his peas, and some other coarse grains, besides occasionally finding out some cracked or broken rails in his fences which easily yielded to a little pressure by these *gentlemen* from without, and by which they found ready access to his fields of grain, often committing very serious depredations, that after all they were by no means so fat as was required for market, and when brought there only realized some 7s. 6d. to 11s. 3d. a cwt.; consequently he was a great loser, and all owing to having *too great* a number in proportion to his feed, and at a time when prices were extremely low. Here again he was led to jump at conclusions in the same way as he had done in reference to his horned cattle. He looked upon this tribe, in the first place, (and certainly with some show of reason,) to be at best but a "*swinish multitude*," and the result proved that he must have concluded that the sooner such a race of animals became extinct the better for himself, and most likely for every body else, for the following year would be sure to find him in the opposite extreme, viz., without one single *grunt* to grace his farm-yard or premises! Now this sort of mismanagement was nothing short of sheer folly, to say the least of it. Had he, as would have been more rational, kept each year a *moderate* number, and bestowed proper care upon them, how very different would have been the result.

What shall I say of such farm-holders as those who have told me within the last few days that they have not so much as a single pig to put up to fatten this fall for their own use, although I know that they possess all the facilities requisite for keeping a *moderate number*. I really believe that no epithet would be too severe for them; still, as I feel reluctant in calling them by hard names, I will content myself by giving them this simple piece of advice, viz., that if it should ever by any chance, happen to come into their heads to consider or decide as to what class of the human family they properly belong, or in what profession they are practising, by no means to *imagine*, much less *conclude*, that they belong to the *farming* class, for surely to the honorable title of *farmer* they have no pretensions whatever.

Why is it, I would ask, that one farmer succeeds so much better than another in his farming operations, where both commence with equal pecuniary means, and under other similar circumstances, such as similarity of soils on their farms, distance from market, physical help, &c.? What, but because the one has had more *practical experience*, proceeds more *systematically*, exercises more *forethought*, is more *industrious*, always taking care to attend to each portion of his labour in its *proper season*, and the like, and performing such labour in a *proper manner*, while the other lacks these qualifications, and in too many instances neglects opportunities for acquiring agricultural skill and knowledge, when he might easily inform himself. Every farmer should endeavour to acquire useful knowledge, for knowledge is *power*, and therefore it is well worth every man's while to search particularly

for such knowledge as bears upon his own profession. Now there is nothing more necessary on a farm than that each particular kind of work should be performed in its proper season: such, for instance, as attending to the destruction of noxious weeds and wild grasses in the summer fallow during the *dry season*, securing the *hay* before the *grain* harvest commences, cutting the grain *as soon*, or even before it is quite ripe, getting it into the barn or well built stacks in its clear bright state as soon as dry, and if possible, not to allow it to remain in the field until it is either *weather beaten* or begins to *shell out* and waste; then when all the grain is so secured, find himself at liberty to cart out his manure, and sow his fall wheat, and after that have proper shelter prepared for all his stock, to protect them from the inclemency of the weather, seeing now that a *rail fence* is no longer considered a sufficient protection against the severe blasts of a long Canadian winter. The turnips, carrots, and manglewurtzels must also be seen to in time, and secured from the frost either in pits or cellars; then again when the good sleighing has fairly set in, a portion of the winter will be occupied in taking produce to market, providing such quantity of firewood that a portion will remain over in a dry state until the beginning at least of the following winter, with a day now and then of relaxation from toil, spent in visiting relatives, friends and neighbours, and thus the routine of all the farming operations go regularly on, the experienced operator taking care to the best of his power that the season for one kind of work shall never encroach upon another, and besides always having an eye to his carriages and farm implements, to see that they are not left exposed to all sorts of weather, but kept in a proper state of preservation, under cover, ready for use whenever wanted. After having hinted to you the favourable prospects that now present themselves to my mind for an increased demand for *butter and pork*, I must also include other productions to which you should turn your attention; for instance *horses*. Good horses are in demand in many parts of the Province, and their breeding should be properly attended to by all means; and our township has gained some celebrity already for the production of these valuable animals. *Sheep*, both for the carcass and fleece, will no doubt yield a profitable return; and I may mention also amongst your grains, that of *oats*, and my ideas of the course now to be pursued as likely to be most conducive to the farmer's interests, is to portion out the farm into *grazing*, *grain*, and *root* departments in a more equitable proportion than has hitherto been the case in this township, appropriating *much less* to *wheat* than heretofore; what land you do allot to wheat, *till* it in the best manner, and fail not to procure the best varieties of seed, thoroughly cleaned and prepared before sowing; that is, such a variety as has been proved by experience best adapted to the soil on which you intend to sow it, for some kinds are suited to high lands, and other kinds to low lands; some to light soils, and others to heavy. And again, with regard to the animals you keep; let the number be *moderate*, not too many nor too few, but let them be good of their kind, and see that they are properly taken care of; and by following a system somewhat approaching to what I have



briefly endeavoured to point out, I feel satisfied that you will become gainers very soon to a considerable extent; for one thing, your land would not be exhausted as it now is, by constantly growing wheat; and by this course, and following a system of rotation of crops you would always have that portion of the farm which would be set apart for wheat, in good heart and condition for such a crop. If I have been somewhat severe upon some of our careless indifferent farmers, I assure you I meant nothing personal, and I wish to be understood that, I by no means consider it a crime for a man to set out as an indifferent farmer who has not been brought up a practical agriculturist, or who has not had an opportunity of acquiring that skill and knowledge, so requisite for carrying on successful farming operations; but I do contend that when such a one undertakes the cultivation of the soil, he is justly chargeable with culpable negligence, or criminal indifference to his material interests, and that of the community at large, if he does not endeavour to *learn from and imitate* those around him who are looked upon as practical and experienced farmers, and who would willingly and readily impart their knowledge to their less informed neighbours; and the farmer is widely different in this respect from men in most other professions, for while he imparts his skill and knowledge to his brother farmer, in order to improve his condition, and make him wiser and wealthier, he does not in any way abridge his own means, or injure his own interests. As I have observed; *systematic plans* are really requisite to success. Men who have not enterprize to *plan*, will have still less if possible to *execute*. Few men do more than they *intend* to do, and there ought to be few who have not ambition enough to rouse their energies to accomplish what they have once deliberately *planned* to do. That man who is the mere child of circumstances, acting only as he is acted upon by his necessities, may enjoy a kind of *Indian tranquility*; with such men only, the march of improvement must stop in its course, and society fall back into a species of barbarism. That man who aims at nothing will certainly accomplish nothing. He that is content with a *shanty* will not likely ever possess a neat, substantial, or comfortable *house*. The man who is content with a shabby, dilapidated house, roofless barn, broken down fences and ten bushels of wheat, and five hundred of hay to the acre, will seldom find himself in a better condition; while he who plans to possess good buildings, permanent fences, and to see his lands ornamented with fruit trees, and covered with forty bushels of wheat, and two or three tons of hay to the acre, with life and a common blessing, will certainly accomplish his plans. Another requisite for the improvement of our advantages, is *Industry*. It is often literally true, that "the hand of the diligent maketh rich," and it always in Canada enables the diligent to possess constantly and plentifully the necessities and comforts of life. To no class of men does the necessity of industry apply more than the farmer. He turns his own wheel of fortune more emphatically than almost any other class; those great and sudden turns of fortune which sometimes raise or depress others, lay

quite out of his track. With firm foothold he climbs the *ascent* to competency; or with loosened energies he slides down the gradual *descent* to poverty. The *eyes* of the master or owner should pervade the whole establishment; his *mind* and his *hands* must be equally ready to do their appropriate work; his example should be such that no idler can feel easy on his premises; nothing more absolutely necessary than that the farmer's *mind* should be in his business. That man who is *above* his business is in danger of soon finding that he has got *below* it. That farmer who devotes his mind and his energies to his farm until it is so far improved, that it elevates him above the necessity of constant labour, is the most independent and enviable character in our country; free from the responsibility of office and the toils and cares of a profession, he eats the fruits he has reared with more zest than can be realized by any other class. A good farm covered with flocks and herds and fruits is a truly enviable possession, and like Robinson Crusoe, the farmer is often "Monarch of all he surveys." I have deemed it proper to mention on this occasion that it is my desire and intention to retire from the Presidency of your Society, so that you will soon be prepared and able to select from your officers, one better qualified to fill the post than myself. It has, I assure you, always been my desire to promote the interests of your society, but my occupation is such that I am frequently prevented from duly attending to the business and duties required of the President, and from performing it in an efficient manner; therefore I consider it an act of injustice towards you to remain in such a position longer; and it would be a further act of injustice, as well as ingratitude on my part, were I to omit on this occasion to testify to the forbearance and indulgence which you have always shewn to my many defects; and it is a sincere pleasure to me to say, that ever since you first called me to preside over the society, and to fill the responsible and honorable office of President of an Agricultural Association, I have always met with the greatest kindness from all the officers of the society, and for my own short-comings I trust they will pardon me. It is certainly a fact worthy of notice, that the greatest harmony and good feeling have always prevailed at our meetings, and I assure you it will always be gratifying to my feelings to learn that the same degree of harmony and friendly feelings continue to characterize all the future proceedings of your society, and although I shall not be President, I intend to give it my support as a *member*.

Before concluding, I would beg to remark, that I do really believe the prospects for the farmers of Canada are now more cheering than at any previous period. There can be but one opinion that this our adopted country is fast improving in all the elements of comfort and wealth; our *exports* are increasing rapidly, and although our *imports* are greater than is to be desired, it is to be hoped that the day is not far distant when the amount of the latter will not approximate so near to that of the former as at present, but be much lessened. Our great aim should be to raise up manufactories in the Province for numer-

ons articles, which we are at present under the necessity of importing, often at great cost. By adopting such a course, by raising up Towns and Villages where various descriptions of artisans would congregate for the purpose of manufacturing those articles, we shall at the same time be creating a home consumption for a large portion of the surplus productions of our fertile soil. With railroads, macadamized and gravel roads, and other important projected improvements in prospect, I am convinced that Canada is destined at no very remote period, to become a great and wealthy country; and if every farmer pursues a proper and judicious course, husbanding all his resources, suffering neither *fodder, manure, fuel*, nor any other adjunct to his farming operations to go to waste, he will materially contribute towards bringing about such a result, for let some of them think as little of their profession as they may, farmers are the *bone and sinew* of the country. It is to be regretted that this day for our Autumn Show has turned out so wet and unfavorable, so much so, that great numbers, I am sure, have been prevented from attending, and from which cause the enjoyment we looked for has been considerably marred. However, we ought never to repine at any act of Providence, which rules all things and orders all things for the best, and to which it behoves us to bow submissively. This Show, I fear, will not compare favorably in some departments with your previous ones, owing to the unfavorable state of the weather through the greater part of the day. However, let not this discourage us; let us hope for a better day next time, and let us by no means neglect to support as we should these Agricultural Societies, which have been the means of doing so much good, and which are so well calculated, if properly conducted, and equally protected by the Government, to do still more good every succeeding year. The Legislature is now about to make some amendments in the law relating to these societies, and it becomes our duty to second those praiseworthy intentions on the part of our Legislators, and to show by our exertions that we duly appreciate the valuable support given to these societies by the Government. If you conceive, gentlemen, as no doubt you will, that my seeds of information have been badly cleaned, too hastily prepared, as well as carelessly sown, I trust they will not fall upon barren ground; for, believing, as I do sincerely, that for the kind of soil on which I had to sow them, they were the best which I could in my haste cull from my own store, together with a few borrowed grains which I have thrown in here and there; and although sown *broadcast* by an unpractised hand, I think you will admit that they are not deficient in *measure*, so that allowing the light grains to perish, I trust that those which survive will take deep root, *stool* and spread, and in good time produce a profitable return, or at least prove germs that may produce a better sample of seed; and should any such results follow, I shall feel amply paid for my time spent in sowing them. The show of young horses, mares and foals to-day is certainly creditable to the exhibitors and to the township at large; the few sheep exhibited were by no means inferior, and it appears that

some of them were readily bought up at good prices; the quantity of wheat on the ground is very fair as to *quality*, both fall and spring varieties. I do think that some of the samples could not easily be beat in the Province; and for the domestic woollens, both as to *quantity* and *quality*, they have exceeded anything of the kind ever before brought under our notice on a similar occasion within the township, doing very great credit both to the producers of the wool, the carders, spinners, weavers, and cloth-dresser or finisher. There are one or two remarks which I forgot to make. The first has reference to the proportion of the government grant allowed to the township societies, which I think is by no means equitable, being too small; so much so, that these local societies are enabled to offer but a small amount of premiums on occasions like the present; too trifling, generally, to rouse sufficient competition. Could these township societies be placed in a position to enable them to offer larger and a greater number of premiums, they would effect much more good than can be expected with their present limited means. I am willing to admit that much may be advanced in favor of giving to the County Societies a large share of influence, with a view to bring the very best and choicest productions of the whole County, periodically, into one focus, and for mustering as large a number as possible of the most influential and best informed farmers; but so far as my observations have led me, I am quite of opinion that in the present state of society, particularly in the rear townships, these county meetings do not attract to any extent that *class* which most need a spirit of emulation infused amongst them, but are confined in a great measure to the leading farmers, and men of other professions, including a portion of the poorer farmers that reside within a very moderate distance of the place of rendezvous. Now I am led to the conviction that the township societies, if placed upon a proper footing, are decidedly better calculated to supply this desideratum, viz., of *bringing those together who most require instruction, encouragement, and a spurring on*. I am sorry to have to inform you, that in consequence of our funds for the year being nearly exhausted, the Directors have with much regret been obliged to abandon the contemplated *Ploughing Match*. I would advise the Directors to instruct the Secretary to correspond with some of the neighboring township societies, on the subject of those resolutions which you adopted at your last annual meeting, in order to obtain an expression of opinion thereon. Before parting from you, I must be allowed to say, that it is my firm conviction that the members of our society do not take as much interest in the *County* exhibitions as they ought. I feel satisfied that a better attendance of our members at these shows would be attended with beneficial results.

The object sought to be obtained by the passing of one of these resolutions has been provided for by the new Agricultural Act, viz., that of appropriating *three-fifths* of the Government grant for the use of *Township Societies*.—Ed.



**ARTIFICIAL STONE.**—Owen Williams, of England, has just taken out a patent for the manufacture of artificial stone. The following ingredients are used in preparing it; 180 lbs. pitch,  $4\frac{1}{2}$  gals. dead oil or creosote, 13 lbs. resin, 15 lbs. sulphur, 44 lbs. finely powdered lime, 180 lbs. gypsum, 25 cubic feet of sand, breeze, scoria, bricks, stone, or hard materials, broken to pieces, and passed through a half-inch sieve. The sulphur is first melted with about thirty pounds of pitch, after which the resin is added, then the remainder of the pitch with the lime and gypsum, which are introduced by degrees and well stirred, and the mixture brought to boil. The sand, or broken earthy or stony material is then added, and the whole mass well stirred, and the dead oil is in a fit state to be moulded into blocks. In order to consolidate the blocks, pressure is applied to them in the moulds. The patentee gives also the proportions of the above materials to be used as a composition for laying pavements, as a cement for uniting to each other blocks of the first-named composition, when used for building purposes, and as a coating for bridges, the roofs of buildings, &c. The artificial stone hardens in about a week, when it becomes as stubborn as granite. The composition is not only a very durable, but a cheap one, it costing less to erect buildings out of this material than from the commonest kind of brick. A roadway, plastered with this material, becomes a smooth, solid, flooring of rock in about ten days.

## The Agriculturist.

TORONTO, FEBRUARY, 1853.

### FLAX CULTURE.

We have received of late, several enquiries relative to the means which are being taken to extend the cultivation and preparation of hemp and flax in Canada. Those who feel interested in the subject, which is one of daily increasing importance, may rest assured that the matter will not be allowed to go to sleep, although since the Provincial Exhibition but little has appeared in the public prints about it. We have reason to believe that the question is occupying the earnest attention of the Ministers of Agriculture, and that that functionary either himself, or in connection with the Board of Agriculture, will shortly adopt some practical means of facilitating this object.

The fact is that changes or improvements, as they are called, are being so rapidly made in the United Kingdom, in the method of preparing and manufacturing Flaxen fibre, that a considerable practical difficulty exists in determining without further experience, which is in reality, taking

all things into consideration, *the* best and most economical process. Donlan's machine, which was sent by the CANADA COMPANY to our last Exhibition, is among the most recent improvements, and a mechanic of this city is constructing a new machine after that model. Donlan's machine will be thoroughly tested here during the present year, and from the deep interest which Mr. WIDDER feels in the subject, an interest which we believe is equally shared by the Directors of the Company in London, who will not fail to inform their principal commissioner here of whatever changes or improvements may take place at home, we have therefore good reasons for expecting, that before the expiration of many months, a clear and satisfactory way will be opened to us, in this country for preparing flax and hemp, in the best and most economical manner. In the mean time we will not fail to apprise our readers of whatever comes to our knowledge that is possessed of any practical importance.

We will conclude our remarks for the present, with some statements on the cultivation of Flax, condensed from an interesting paper read by Dr. Anderson, Chemist to the Highland Agricultural Society, entitled 'Summary of Discussions at the Monthly Meetings in 1851-2,' which appears in a recent number of the Society's Transactions.

Flax was formerly cultivated to some extent in Scotland, but of late years it has been almost abandoned, owing, however, to the low price of grain, induced by the late fiscal changes, the culture of flax has been revived, and attempts are being made to bring it within a defined course of rotation. The recent new process of preparing it for market without the old tedious, and sometimes unsatisfactory methods of steeping it in water, have mainly contributed to the production of this result. "It may be safely laid down as a rule, that in a country where labor is dear and rents considerable, the old process can scarcely be made to pay, except under the most favorable circumstances." Under the old system of retting, variations in temperature and the character of water and inattention to various little precautions, which are sometimes most difficult strictly to observe, would so deteriorate the fibre as to render it comparatively worthless: and if flax is to be made to pay at all it must be with the assistance of the new processes, which have been found upon trial more or less satisfactory. It has been proved that by adopting these modern improvements, the cultivation of flax has in most instances turned out more profitable than other crops.

It has been usually considered that flax is a great exhauster of the soil, by extracting a greater amount of inorganic matter than most other crops. Recent practice, we believe, as well

as scientific researches, have gone to disprove this popular belief. Dr. Anderson observes :

"The chemical investigation of the plant shows that there has been much misapprehension on this point, and that under proper management it does not exceed, if indeed it does not considerably fall short of, other crops in this respect. It has been thoroughly established that, with flax as with other crops, the principal part of the valuable constituents are accumulated in the seed, and comparatively little in the straw. Now, it has been found by experience, that the finest quality and most valuable fibre is obtained when the flax is cultivated under such circumstances, that its production of seed is as small as possible. This is effected practically by sowing close, and by avoiding too large a supply of manure, which has the effect of producing a coarse and inferior fibre. If this system is pursued—and it is manifestly that which for all reasons must be most profitable—flax cannot be considered more exhausting than a white (grain) crop. I am assuming, of course, that, as used formerly to be the case, both straw and seed are removed from the land ; but if, as will probably be henceforth practised, the seed be employed for feeding on the farm, I apprehend it will turn out to remove less valuable matters than a crop of Oats, of which the seed is removed, and the straw returned to the land. Such, at least, is the inference to which Science would lead us, but it would be most desirable to have it confirmed by actual experiment."

Soils of a *medium* quality, such as are neither too wet nor too rich, produce the best kinds of flax for the better descriptions of manufactures. A very rich soil produces a too luxuriant growth, and consequently a coarse fibre.

Schenck's patented system of steeping has already given a powerful impulse to the cultivation of flax, both in Great Britain and Ireland, and its principle is very simple. It consists in placing the flax straw in small vats, in which it is covered with water kept at a uniform temperature of 90 degrees, by a steam-pipe passing through it. The flax is exposed to this treatment for a period of from 60 to 70 hours, and at the end of that time, the process of fermentation is complete, and the fibre can be separated from the husk and other parts.

With respect to Schenck's system, Dr. Anderson remarks :—

"There is no question that this process is a great improvement, but I have no doubt that it is yet in its infancy, and that it is still far from perfect. I happen to know that a patent for steeping flax upon another plan is also about to be taken out, the preliminary experiments on which have, I am given to understand, been most successful. Other processes have also been proposed ; and one—that of the Chevalier Claussen—has been introduced to the public with great flourish, and great results are expected from it, but which, I must confess, I do not think will be realized. That patent is for a method of converting flax into a substance like cotton, which is done by a somewhat complicated process. Now, if the patent had been for converting the cotton into flax, I should have understood it, for that would have been converting a cheap material into a dear one ; but I cannot see how any thing is to be made by converting a dear substance into a cheap one. If it is meant that inferior qualities of flax are to be converted into fine cotton, we can

just conceive the possibility of its paying ; but if that is all that is to be done, it can be of no benefit to the farmer, because he may depend upon this, that if he is to make the cultivation of flax pay, he must aim at producing only the superior qualities."

#### PROGRESS OF CANADA.

The present condition and future prospects of this portion of British America cannot be otherwise regarded than as highly satisfactory and encouraging. On all sides we see daily increase of progress. Villages are rapidly springing up in all directions ; the older of them fast growing into towns of no mean size, and transacting an ever increasing business, while several of the latter will soon gain the rank of corporate cities. As the railroad system becomes developed in Canada, so will its business increase. Already, in several localities, the expenditure of a few years persevering industry has literally made the desert blossom as the rose. The following letter, which we copy from the *Brampton Mercury*, written by John Lynch, Esq., an old and respectable settler, well known to many of our readers, is only a single specimen of many of a similar character, which might be culled from the press of different localities. Canadians have now the satisfaction of knowing that their own country is making a similar progress in all the appliances of modern civilisation to their enterprising neighbours of the United States. The difference in favor of the latter that formerly obtained, has often been much over-coloured and exaggerated, by tourists and others ; while at present Canada is rapidly assuming a position which must preclude the possibility of an unfavorable comparison :—

"In the beginning of the year 1820, the tract of land on which the village of Brampton now stands, and for many miles around, was an unbroken wilderness, unmarked by anything to denote the proximity of the white man, but the slight traces which the surveyors had left in their survey of the previous summer. In the course of 1820, the Township of Chinguacousy was partially settled, and its population, with that of the neighbouring townships, has continued steadily to increase, until now the spot which thirty two years ago formed part of the immense hunting ground of the Indian, where the wolf and bear roamed at pleasure, has become one of the finest Townships in Western Canada. Upon the Hurontario street, in the above-named township, stands the Village of Brampton, now the residence of over 1,000 human beings, covered (the ground I mean, not the human beings) with numerous merchant shops, manufactories, dwellings, &c., alive with the hum of business, and



giving to even a casual observer, convincing proof of solid prosperity.

"It may not be amiss to mention as a curious incident, that in the summer of 1820, a colony of Beavers, frightened by the earlier settlement of Toronto Township, established themselves on the banks of the Etobicoke Creek, on the spot where Brampton now stands; but the sound of the axe of the sturdy Pioneer soon disturbed them, and they took their departure to parts unknown.

"The first appearance of anything like a Village was in the year 1834, when Mr. John Elliott sold a few lots off his farm for Merchants' and Mechanics' shops, and called the place 'Brampton,' after a place in England, near which he formerly resided. One of the lots was purchased by Mr. Abijah Lewis, now of Cooksville, who built a store upon it, which was for many years the only one in the neighborhood. The store and lot were subsequently purchased by Peleg Howland, Esq., our present gentlemanly Postmaster, and is now the site of the Post-office and Mr. Howland's store. About the same time several industrious mechanics established their trades in Brampton, and soon obtained a good and constantly increasing business.

"In 1840, George Wright, Esq., M.P.P., established the second store in Brampton, and it is but justice to Mr. Wright to say that he has done more by his enterprise to encourage the prosperity of the Village, than any other one individual. By his enterprise in building and other improvements he gave employment to a great number of men, and thus attracted an industrious population to the place. One of the fruits of his enterprise is the splendid Steam Flouring Mill, which turns out over one hundred barrels of flour every day, and is a great advantage to the Village and the surrounding country.

"There are at present in Brampton, one Steam Flouring Mill, one Foundry, and a second in course of erection, one Thrashing Machine shop, the Messrs. Haggerts', at which the machine that took the second prize at the last Provincial Exhibition was made, one large Tannery, the proprietor of which being about to retire from business, now offers it for sale or to rent, two Clock and Watch-makers' shops, several Waggon and Carriage makers, Saddle and Harness makers, Cabinet makers, Chair makers, Blacksmiths, and Tradesmen of almost every description; but no loafers. There are six good Inns and a Temperance House, a Livery Stable, Boot and shoe makers, and other places of business too numerous to mention, but for which I refer your readers to your advertising columns. There are three Churches, five Clergymen, four Medical men, two Drug stores, a Book store, a Land Agency, an Attorney's office, and last, though not least, the BRAMPTON MERCURY, just spreading his wings to carry to the inhabitants of the civilized world, and some parts of the United States—as your elder brother of Streetsville would say—the sayings and doings of the Bramptonians.

"There are places, no doubt, which have advanced more rapidly than Brampton—though but few such places could be pointed out—but I know of no place which has increased in the

same ratio with such a substantial and healthy growth as Brampton. There has been no magic in its progress, no building of castles in a night by rubbing an old lamp, which might disappear the next night by a little adverse rubbing; but the prosperity of Brampton—whatever it may be—is owing to the industry and perseverance of its inhabitants, combined with the advantage of its locality, being in the centre of a splendid agricultural country, settled by an industrious and wealthy population, and being also the principal market for the produce of a large extent of back country.

"There is nothing very attractive in the first appearance of Brampton, but there are some very good brick buildings, and numerous buildings are in course of erection. There is not, at the present time, one house to let. The Village is distant about thirteen miles from Port Credit, and twenty-six from the City of Toronto, and by the line of railway about to be commenced this will be reduced to twenty miles.

"In accordance with a proclamation of the Governor in Council, Brampton is now an Incorporated Village, the election of its first Council to take place on the first of January, 1853."

#### SMITHFIELD FAT CATTLE SHOW.

This Exhibition was held in the usual place in London, the beginning of December, and from all the accounts which have reached us, it seems to have been eminently successful. The new regulation of allowing the different breeds of animals to compete only in their respective classes, came for the first time into operation and appears to have given general satisfaction. So diverse in point of size, habits, adaptation to different pastures, climates, &c., are most of the distinct breeds that it has been found in practice exceedingly unsatisfactory, if not utterly useless for practical and economical purposes to class them together. A *Hereford* cow, belonging to Mr. J. Dunne Cooke, was the winner of the gold medal, as the best heifer or cow of *any breed*; and Mr. Stratton's 4 years and ten months old *short horn* ox, gained the gold medal, as the best steer or ox of *any breed*. A general examination of the animals exhibited (says the *Agricultural Gazette*) results in one unquestionable conclusion, viz.: *the value of symmetry alike in oxen sheep and swine*. The *London Times* has the following remarks:

"There are not more than a half-a-dozen beasts shown of a decidedly second rate character; and the two worst of these are foreigners. It is to be hoped that the introduction of continental stock at these annual exhibitions may not be discouraged by the overwhelming character of the competition to which they are unavoidably exposed. They have established a place for themselves in the markets, and our agriculturists can take no harm, and may derive some useful hints from seeing the best Dutch cattle once

a year placed in juxtaposition with their own. Among other features of the present display may be noticed the skill with which our breeders, in each class, are rearing their animals so as to approach certain standards of shape. Their unremitting exertion have enabled them to get rid of old defects, which were at one time regarded with favour, and so to manage that their stock shall carry the greatest amount of fine meat in the best places. The North Devons have always had, and still retain, the advantage in this respect; but it is wonderful what improvements towards the same end have been made in other breeds and especially the Herefords and Short-horns. If any one wants an illustration of this, let him compare with any of the prize cattle, an old-fashioned Short-horned cow exhibited by the Marquis of Exeter—not a bad specimen of her kind, but still illustrating by contrast, the increased symmetry of younger animals. The most remarkable beast in the yard is certainly Mr. Richard Stratton's ox; its shapeliness and enormous size unite in giving it an advantage to which, were either of these qualities considered separately, it would, perhaps, not be so clearly entitled. Among the cattle we notice one rather singular fact, that while there is a fair show of West Highlanders, Angus, and polled Galloways, there is not a single entry of Welsh or Irish. How comes it that our Northern agriculturists, even from as far as Shetland, are thus represented, while from the rich pastures of the Emerald Isle and from the hills of the principality nothing is sent? The classes devoted to cross-breeds contain some excellent specimens, and as these, after all, show the staple which supplies our market with beef, they will be examined with proportionate interest. Among them will be found one remarkably fine steer, exhibited by Mr. Joseph Philips of Ardington, Berks, and an equally handsome heifer, shown by Mr. Robert Beman, of Moreton-in-the-Marsh, Gloucestershire. If in their awards for cattle the judges have made any mistake, we should be disposed to say that it was in giving a prize to Prince Albert's Hereford steer, which seemed to us not comparable to that of Mr. W. Heath, of Ludlamhall, Nowich, standing next to it. Early maturity, economy in feeding, and a carcass affording the largest quantity of meat distributed in the best joints, ought to be the tests of a good show of fat cattle. The judges point out the finest beasts, but without, we fear, the essential reference to those other considerations upon which the practical value of the exhibition depends.

In the display of sheep, the present show comes out very strongly, and here again, in all the classes, great excellence is attained. The Marquis of Exeter carries off the gold medal for the best pen of one year old Leicesters, and Mr. Sainsbury, of West Lavington, shows the best one year old South Downs. There is also considerable display of cross breeds of extraordinary merit, and to which some of our most eminent agriculturists have contributed. We would draw particular attention to the pens exhibited by Mr. G. R. Overman, of Burnham Sutton, Norfolk, and Mr. W. S. Stevens, of Galthampton, Oxfordshire.—One point which occurs forcibly to the visitor of these annual shows, is the preference which the Smithfield Club appears to give to pure over cross-breed stock, notwithstanding that first crosses are of all the most profitable to send to market, that Smithfield is necessarily supplied with a small proportion of pure bred sheep; and, that an exhibition like that in Baker-street, is one where strict attention to purity of blood is not requisite, and can be dispensed with. The tendency of such predilections is to shut out practical men from the competition, and leave it in the hands of breeders and amateur agriculturists. The club, it will be perceived on reference to the prize

list, gives no gold medal except in the pure breed classes, and their money premiums for those classes are on a larger scale also. There is an obvious risk in making such distinctions with their new classification, for they will thus be insensibly drawn on until all difference between their exhibition and that of the Royal Agricultural Society disappears.

The present show of pigs is quite equal to that of former years; and the pen to which the gold medal has been awarded will for the next few days occupy no small space in the attention of the visitors.—Those who cannot work their way through the crowd to see them will do well to examine the porkers sent to Baker-street by that enterprising and spirited agriculturist, Sir John Conroy. They are excellent of their kind, and have won him no less than three prizes.

To the existing attractions of their show we understand that the club contemplate adding next year a display of poultry, which cannot fail to be popular. One of the smaller evils of Protection was that it brought into unmerited contempt an interesting and profitable branch of rural industry, which being neglected, our poultry became so dear and bad, that we had, and still have, to draw our principal supplies of them from France and Belgium.

As an offshoot of the exhibition of stock, the bazaar contains also a great collection of agricultural implements supplied by the best makers, and two collections of farm produce, which are of a remarkable excellence and deserve the careful inspection of every visitor. The first of these is by Gibbs & Co., of Half-moon Street, Seedsmen to the Royal Agricultural Society. It is beautifully arranged and shows great care in the selection of the specimens. The second is a contribution from that valuable institution, the Royal Dublin Society, and illustrates the capabilities of the Irish soil and climate for the growth of green and root crops in a manner truly wonderful. Mr. Corrigan, the society's curator, has brought over this highly creditable display of farm produce, which we understand is the residue of the society's last autumnal show, and is composed of contributions from the best agriculturists in Ireland.

#### DISPLAY OF IRISH FARM PRODUCE AT THE LATE SMITHFIELD CATTLE SHOW.

The department of Seeds and Roots of English growth was very extensive and of a high character. A novelty in connection therewith is worthy of special notice, viz., a splendid display of *Irish productions*, forwarded by the Royal Agricultural Society. The *Morning Herald* and other papers speak in the highest terms of the farm productions of the Emerald Isle, where improved tillage and farm management are happily progressing in an accelerating ratio. That most useful and talented journal, the *Irish Farmer's Gazette*, remarks in reference to this matter: "Our English friends have had now, for the second time, ocular proof of the excellence of our soil in such productions; they have also proof that we are not the indolent, ignorant people, some take a delight in representing us to be; for they must not suppose that the production of those fine root crops are only to be attributed to the great natural



fertility of our soil, fertile as it is, without a corresponding exertion in systematic and first-rate tillage, and the application of suitable manures. Improved drill husbandry is no new thing in Ireland."

The specimens of Swedish turnips and mangel-wurzel exhibited are described as of enormous growth; some of the returns showing an average weight of 50 and 60 tons per statute acre! Most of these splendid crops were produced on land which was pronounced a few years since as exhausted and worn-out, and recently purchased in the Encumbered Estates Court; thus affording an indisputable proof of what the naturally rich soil of Ireland can do under proper management.

In connection with this truly pleasing and hopeful state of things, several instances of farm management are related which clearly show that in several districts of Ireland both tillage and draining are rapidly improving. We regret that our space will not admit of details, which could not fail of being interesting, and in some degree useful, to many of our readers. Surely old Irelands, "good time" may now be safely said to have commenced. Success to her exertions.

#### IMPLEMENTS AND MACHINES AT THE SMITHFIELD CATTLE SHOW.

The *Mark Lane Express*, one of the ablest and best conducted Agricultural papers in Great Britain, observes that the number as well as usefulness of the variety of engines, machines, and agricultural implements generally, exceeded all previous occasions. The number of *Reaping Machines* gave an air of novelty to an English Show. Our contemporary remarks:—

"Perhaps, however, the most striking advance upon former shows was in the reaping machines. There was a great variety of modes of cutting, each claiming merit, and no doubt possessing great advantages for certain purposes; but which of them is the best for cutting the grain crops of England time has yet to prove. First Bell's, on the perfect scissor or clipping principle; Crowley's & McCormick's, the drawcut with a sickle edge; Dray and Co.'s, the Husseyan or chopping plan; Garrett's, a combination of the clipping and chopping principles; Croskill's, a combination of the drawcut and clipping principles, with a fine serrated edge. All these plans have been more or less used, and found to answer in different degrees. The clipping has had the longest practice, and has retained the highest merit wherever it has come in competition with the others, as the farmers require a reaping machine—and no machine can be fully entitled to the name, except it cuts and lays down the crop in a continuous swathe, or in parcels large enough for sheaves. Thus the success of such an implement will not be dependent upon the activity and muscular strength of labourers, who are a class

of men that do not like to be put much out of their old pace of moving; this, coupled with the past wet harvest and heavy crops, proved almost fatal to the American reapers; while Bell's, under the same disadvantageous circumstances, was applauded wherever it went. We are convinced that its great success lay much in its cutting, gathering, and laying down the cut crop in a beautifully arranged swathe, without the aid of man, except as far as driving the horses is concerned; and here the driver using a pair of reins, and steering or guiding it like a plough, soon feels himself at home, because the mode of action is thoroughly understood by him. We are convinced that if the harvest had been as dry as usual, the American machines would have gained a fair share of confidence among the farmers, and with some improvements, we are of opinion they will become a popular and useful branch of machinery.

Mr. James exhibited a variety of weighing machines for weighing all sorts of live farming stock and other produce of the soil. We are strongly of opinion that the time is not far distant when farmers will use the test of weighing the food for their stock, and the stock occasionally while growing or fattening; thus the farmer will be able to detect the errors he committed in selecting or breeding his stock, and the feeding value of each description of farm produce. In fact, we were the more impressed with this idea as we mused over the immense size and weight of the fruit, roots, and plants, we saw on the stands of the eminent seedsmen; and especially on the produce of the Emerald Isle. sent over from the Dublin Show, which spoke louder than words that both the soil and climate of Ireland are all that can be desired.

With reference to the Steam Engines for Agricultural purposes, the *Morning Chronicle* has the following remarks:—

The yard adjoining the premises was visited in the course of the day by numerous scientific and practical agriculturalists, the source of attraction being a number of portable steam engines at work, by the most eminent makers, including Messrs. Garrett & Son, Messrs. Tuxford & Sons, Mr. Hornsby, and Mr. Burrell. The engine of Messrs. Garrett & Son was shown in connection with their very complete threshing machine, to which we yesterday alluded. The engine of Mr. Burrell was also shown driving a threshing machine. The engine, however, of Messrs. Tuxford & Sons excited the greatest amount of attention and interest. The advantages of the portable housed engine of this firm are self-evident, and the number of them which has been made by the firm proves that they are duly appreciated. At the late Great Exhibition this engine was selected by the engineers of the French and Prussian Governments as the best shown, and two of them were purchased for deposit—one in the Conservatoire des Arts et Metiers, and the other in the Museum of the Royal Society at Magdeburg. The working parts of the engine are effectually protected when at work from the destructive grit and dust especially given out in most agricultural operations. They are secured from the weather at all times; and from any interference with their working parts by being under lock and key. They may be managed by any ordinary farm labourer, with a few days' instruction. They have upright cylinders, this, it is contended, being the best position to ensure the cylinders not wearing oval, as is the case with the horizontal cylinder. The "governors" of the engine act in a very simple and effective manner direct upon the throttle valve, and from their arrangement cannot well be put out of order. The boiler is made of Low-moor iron, and has water-pipe flues leading from

the fire-box and returning through lap-welded iron tubes, thus avoiding immediate contact of the tubes with the fire. The total weight of a six horse engine, mounted on four wheels, is but 54 cwt.; the consumption of coal does not exceed the extraordinary low amount of 5 cwt. per day of ten hours. Every precaution is adopted, by means of "spark traps," to avoid accidents from flying sparks. Few questions are of greater interest to the agriculturist than the application, in as simple and economical a manner as possible, of steam power to the varied operations of the farm; and it is pleasing to find the energies of the most eminent agricultural machinists devoted so strenuously to the subject.

### THE BIRMINGHAM CATTLE AND POULTRY SHOW.

The fourth annual exhibition took place in Birmingham, the week after the Smithfield Exhibition, and was, as might be expected, more successful than any of its predecessors. In order that our readers may be put in possession of what is doing in this important department of husbandry, in the old country, we subjoin, without curtailment, an ably, and we doubt not, impartially written article from the *Mark Lane Express* of December 20th:—

With an extraordinary want of discretion in the management, the Birmingham Cattle Show has hitherto been made to clash with that of the Smithfield Club. The natural consequence of this arrangement was to give something of a local and confined character to the exhibition; never, in fact, until this season was the meeting here allowed anything like full justice being done to its merits and capabilities. There are few towns, be it remembered, with better recommendations for a display of the kind than Birmingham. Famously situated, almost in the heart of many of those counties renowned for their several breeds of cattle and sheep, as well as fed by rail from nearly every quarter more distant, the success of such a show could scarcely be questioned. Further than this, the hall devoted to the exhibition is now, perhaps, the best in England; it is certainly the best we ever visited. Spacious, lofty, and admirably arranged, with the most perfect ventilation and general completeness of detail, it becomes a pleasure indeed, rather than the hard labour of too many of these gatherings, to inspect the different varieties of flesh and fowl brought together in competition. The enthusiast will get a fair turn at every number in the catalogue without that sense of fatigue and oppressive heat which so often has damped his ardour and left his duties unfinished. The mere lounge, on the other hand, has equal reason for a visit; should he tire on that minute examination of stall after stall, he will find at one end of the hall a most convenient resting-place, opening and fashioned like a stand on a race-course, and affording a capital view of the whole yard. If he require yet more substantial refreshment, he can here command it; lunch of every kind is now provided, although the caterer is of too entele a turn to deal in beer!—rather a strange prohibition, considering time and place, and, as we take it, altogether a mistake.

The town of Birmingham, then, has in itself, to begin with, almost every essential for a show of the kind just there. Nothing more was wanting than judicious management to direct and carry out the

business of the meeting. We are happy to add, that, generally speaking, this has been quite worthy of the occasion. Indeed, in one or two points, the Committee have taken a line of their own, that the experience of season after season gives yet more to their credit. The classification of the several breeds of animals, for instance, just adopted by the Smithfield Club; and, above all, the introduction of prizes for poultry; a step worthy of all commendation, and followed again by both the Smithfield Club and the Royal Agricultural Society of England.

The grand mistake, we repeat, and it might have been a fatal one, was putting the attractions of Birmingham in direct rivalry with those of Smithfield. This should never have been, and, as we trust, will never occur again. The result of the last week, must satisfy everybody as to the error of such a course. The Birmingham Management saw many a new and good name in their catalogue, and many a fresh face in their Hall, which they never would have seen under former circumstances. Moreover, for the quality of the Exhibition, as well as for the general success of the meeting, that now over, we are assured, far exceeds any of its predecessors. The old supporters of the Society, however, have little to complain of from this introduction of new blood; they have fairly held their own, and in some instances, as fairly beaten opponents that came against them in all the flush of recent triumph.

This is the case with the short horns, as a class decidedly superior to any in the yard. Mr. Stratton's beast, which last week took the gold medal at Smithfield, and was pronounced there a very perfect animal, succumbs here to one of Mr. Drakeford's of Coleshill. They are both very fine specimens of the breed, and many a good judge has been puzzled to decide between them. At first one might be inclined to favour Mr. Stratton's, and to question whether Smithfield has in reality been beaten. His is the larger as well as the older beast, and it is difficult indeed to find fault with him. The other, if not quite so showy, will well bear the test of close examination. The more you look at him, the more you like him; wonderfully level and even as he is from end to end, it shall not be for us to dispute the correctness of the award.

In the short horn cows Mr. Towneley takes the first prize and gold medal of the show. This gentleman has now become famous for his cows, as witness his success at Lewes this year. The one he now exhibits will only add to his reputation as a judge; she was deservedly the picked animal of the whole yard. Some further entries from Mr. Stratton, Mr. Wiley, Benam, and other noted short horn breeders, contribute to make up a display of short horn cattle that has seldom been surpassed.

It is not our purpose, nor would time admit of our going through the whole of the classes. We may note, however, that the Herefords, if not perhaps in any way disputing the place with the short horns, were generally good; but they are not so much at home here and so, not quite so generally appreciated. Of the Devons there was not a strong entry, it may be from the same cause; still, in what were shown there were some very neat specimens of the pure breed; Lord Leicester, who took the first and second prizes in oxen, winning the former with one of Mr. George Turner's own sort. The general character of the show, nevertheless, does not so much depend on the actual purity of the stock as a distinct breed, as it does on their utility and fitness for those districts from which the classes are chiefly filled. This is especially remarkable in the sheep, of which the South-downs have very decidedly the call; but even these



have rarely the thorough-bred look we are accustomed to in Baker Street, and at the exhibitions of the Royal Agricultural Society. The crosses from them "the Shropshire" and others—may rather be taken as the great feature in the sheep; the Leicesters, with one or two exceptions, making but a poor stand. We certainly expected to have seen a better show of them.

Of pigs, fat and breeding, the entries were numerous, and almost all excellent. In both these divisions Sir John Conroy exhibited to great advantage, with his Abfordley improved pig. The best test for the fat pigs was the eagerness with which they were bought up, at wonderful advance on the price of last year. In fact the sales generally were good; and when we left there was little prime stock in want of buyers. In the small pigs for breeding we especially commend two lots, sent by Mr. Leigh Clare, of Bristol, one of which obtained the first prize and medal. They were a very fine sample of the improved Essex. Though here again, in the pigs of Birmingham, purity is not generally bowed down to—at least as the standard of profitable excellence. But, after all the great strength of the Birmingham show is centred in the poultry. For one man in a railway carriage or a coffee-room that introduced himself with an observation touching the points of a short-horn, or the flavour of a south-down, twenty were learned in Cochins. Country clergymen, *ruse in urbe* citizens, elderly gentlemen going on their own account, and striplings armed with unlimited orders, were all intent on Cochins. It was not the cattle show—the grand attraction was the "Cochin Show." With the Birmingham Society rests the credit of having first called attention to a branch of breeding so long and so strangely neglected. By its influence the different varieties of domestic birds have been rapidly improved: and, appropriately enough, at this last exhibition there was such a display of poultry as never before was gathered together. Dorking, Game, Malay, Hamburg, pigeons, turkeys, geese and ducks of almost every known kind, were there, to be rewarded according to their several merits. And extraordinary merit there was, too, in every class; but still it was of but secondary consideration. The mania—and it is now nothing short of a mania—turns on the Cochin-China. We hear commonly enough of fifty or sixty guineas being asked and given for a lot of four birds; and we inquire in some ignorance may be, can this be warranted? What superiority has the Cochin over the Dorking or Game fowl? His appearance, for one point, is decidedly against him; no one we should fancy, would ever attempt to rate the Cochin as a handsome bird. The two breeds we have just named as well as many others, are in this respect infinitely before him. Is it in flavour? Here, again, we question very much whether he can compare with the Dorking or Game; in fact, the result of our own experience—limited, we admit—is that for the table he is better crossed than when served up in all his native purity of size. Is it this size, after all, that is his chief recommendation? We trust not. If with it can be coupled early maturity, and the hen birds be depended on as good layers, the policy of encouraging the breed may be admitted. These very points, however, must of themselves tend rapidly to diminish the extravagant "fancy" prices now given: and the sooner the better. We may then begin to consider them as the common farm-yard fowl; ascertain how economically they may be reared, and how, in reality, they are appreciated. At present the breeding of the Cochin-China is not, as we would see it, the business of the farmer's wife and daughters, but rather the hazardous speculation of the dealer, or the costly luxury of the amateur. We write—as we hope we need

scarcely say—in the best spirit and with the best intention. If we have not done full justice to this highly prized fowl we shall be only glad to be better informed. Many, as well as ourselves may not be above the advice. As it is, we give the greatest credit to Birmingham for having first introduced such a feature into agricultural exhibitions. It must—it has—not only wonderfully improved and circulated our best breeds, but it has given the ladies a direct interest in these shows they never had before. It is on these two points we join issue—Is the Cochin-China fowl such an improvement on other sorts as to rank him, perhaps for a very long day, far beyond "the pocket-money" of our wives and daughters?

#### OXFORD COUNTY—ITS RAPID PROGRESS.

In our last number we noticed the publication of the "*Oxford Gazetteer*," a highly creditable work, showing in the most indisputable manner, by statistical returns, the rapid and healthy progress which is making in that productive section of Western Canada. We are tempted to make room for the following article in a recent number of the *British American*, published at Woodstock, that our readers—particularly those in the *Old Country*—may see that this Province holds out strong inducements to all classes of industrious and respectable settlers, where they may achieve an honorable independence and avoid those numerous drawbacks, which are more or less necessarily incidental to all strictly new settlements. In this age, and in a young, rising country, the results which under a former state of things in the old states of Europe, would have required centuries to develop, are successfully worked out in a single generation.

The rapid growth of many of the western towns of the neighboring Union, has called forth expressions of wonder from the tourist, and the columns of many an English publication have blazed forth the almost magic creation of what are now densely populated cities and mercantile marts.

The growth of American towns is probably beyond precedent in the annals of civilization and population; but when we take all things into consideration, the nature of the people, their speculative propensities and love of change, acting on the raw material of a new country, we can reasonably account for this wondrous result of human energy. Nor is the United States the only place where the same spirit is manifest. Canada, though denied many facilities which our neighbors possess, has not been behind in improvement—even in localities where essential advantages and the ordinary streams of business and travel seem to be wanting. In 1827 London was a wilderness, now it is a splendid town—a nucleus to the industry of a rich, flourishing country. Guelph in 1826 was carved out of a dense forest, now it is a town of no mean character. Hamilton in 1830 was in population what Woodstock now is, while in the number of good stores and private buildings of the better class it was far behind our present condition. Nor is it merely in the settlement of our country, and the erection of towns and cities, that we approach our American neighbors; our Educational Institutions are creditable rivals to their more time-honored Col-

leges; while the pure word of Gospel peace is preached in strains as eloquent in the back woods of Canada, and in edifices as elegant in construction and as chaste in style as can be found in any part of the Continent of America. The Arts and Sciences prosper as education extends; and those comforts and luxuries, which the self-exiled immigrant left behind on his native shore, have been brought to the door of all, and that too, at rates so low, that regret for *Home* and its enjoyments is in a great measure forgotten. Free from the evils which over population engenders—and all those burdens which our fatherland labors under, we, through the blessing of Providence, and the free Institutions we possess under the benign rule of our gracious Sovereign, enjoy a share of health and comfort which is often sought for in vain in the more genial climate of Britain, or the sunny plains of the south. Yes, in Canada, the husbandman toils not in vain—the artisan plies not his arduous task without a bright future to cheer him. All, all, have hope before them, and with that hope and a few years of well directed exertion, comes ample independence. This is truly a pleasing prospect, and one we need not fear to see cast in the shade by the giant advances of our American neighbors. Looking over the records of our Canadian cities and towns, we find few apparently in a more prosperous condition than the Town of Woodstock; without that wealth in its neighbouring forests which has given existence to many a town; with little to aid the energy of its inhabitants, Woodstock now, in the commencement of 1853, presents no insignificant appearance to the traveller. The forest is fast yielding before the woodman's axe, and good roads are now being extended in almost every direction. Our stores are stocked with the products of Leeds, Manchester and Paisley. Steam has enabled our mechanics to compete with other manufacturers, and few indeed of the articles which necessity or convenience demands, but are made amongst us. Messrs. Bain and Hay, during the past year, have adapted steam power to their works as Cabinet Makers, and exhibit in their ware rooms many beautiful specimens of the art—Messrs. Brown & Co's Foundry, consumed by fire and rebuilt within the past year, is an extensive and handsome brick structure, where is now cast about 15 tons of iron at a time—a pretty good index of the popularity and capabilities of that establishment. The new Woodstock Hotel is another building that has sprung into existence on the site of the former one, which was also destroyed by fire early in 1852. Under Mr. Matson's charge, as its accommodating and attentive host—with its spacious rooms and splendid furniture—its comfortable construction, and above all, its reputation in the culinary department, it now forms one of the best if not the very best house in the western country. To look back for ten or fifteen years,—who then could fancy that such a building would now exist, or if built, could find support. Great credit is due to Mr. Matson for the arrangement, and to the builders for the execution of the work, and also to many public spirited individuals who so handsomely contributed to its erection.

Our Mechanics' Institute is another feature well worthy of notice. Through the generosity of our Legislature, and the spirit of our people, this body possesses an excellent selection of most useful books, many of which have been recently added, and with a small expenditure of money in re-binding a few old volumes, and putting into book shape several Magazines, Reviews, &c., the Library of the Woodstock Institute will be, in the quality of its reading material, and the external appearance of its books, second to none west of Toronto. This reminds us of another most useful establishment, which has been

considerably increased during the last year, and reflects great credit on its spirited proprietor, we mean W. Warwick's book store and binding establishment. A well selected stock of Books, with a good supply of school books and stationery, was a want long felt in this place; that want is now in a great measure supplied, and Mr. Warwick is well entitled to the patronage of the people of Woodstock for his industry and enterprise. His supply embraces most that necessity and fancy requires, while he prudently excludes from his shelves, all works of a doubtful character. To his book store, has been recently attached, a book binding apparatus, where is carried on all the various branches of the business; gilding and fancy work is also admirably executed. The ruling machine, which has just been added, is in itself a curiosity well worthy an inspection. It is tasteful in its construction, exceedingly accurate and yet withal surprisingly simple. We had the pleasure of witnessing it a few days ago, while an exceedingly nice job was being executed. It was some Royal paper with upwards one hundred faint lines across the page which were recrossed with red lines or columns.—Music paper is also ruled by this machine, and every other variety of blank-book work. In the hands of the binder was a Register for the Woodstock Hotel, the headings of which were printed at this office, and the book bound in the best of English calf, with Russia boards and vellum slips. It was altogether, in our opinion, one of the best samples of book manufacture we have inspected in Canada. Many other marks of rapid improvement in the town and neighborhood of Woodstock can be recorded, to which we hope to find time to revert in some future number.

#### TESTIMONIAL TO DR. McCAUL.

Although the chronicling of musical proceedings does not come within the province of the *Agriculturist*, we are tempted to transfer to our pages, from a city cotemporary, the following notice of the Toronto Choral Society, inasmuch as it refers to a gentleman who has zealously laboured in promoting the cultivation of Literature and the Fine Arts in this young country. It may not be known to many of our readers that our Provincial Agricultural Association is indebted to Dr. McCaul for the chaste and beautiful Diploma which the Society has awarded at its Annual Exhibitions since its commencement: the learned Doctor not only furnished the design, but generously, and we may add patriotically, defrayed the expense of the lithography.

#### TORONTO VOCAL MUSIC SOCIETY.

The Annual Concert of the Toronto Vocal Music Society, came off on Monday evening in the St. Lawrence Hall, before a large and highly respectable, and greatly delighted audience. At the conclusion of the first part a pleasing incident occurred. Mr. G. B. Wyllie, King Street, as Secretary and Treasurer of the Society, presented the Rev. Dr. McCaul with a silver salver with a richly chased silver tea service, consisting of coffee and tea pot, sugar basin and cream jug. Each of the pieces was adorned with appropriate designs of Chinese musical instruments, in bold



relief. On the jug, basin and tea pot, Dr. McCaul's crest was engraved, while the coffee pot bore the inscription—

PRESENTED TO THE  
REV. JOHN M'CAUL, L. L. D.,  
BY THE MEMBERS OF THE  
TORONTO VOCAL MUSIC SOCIETY,  
AS A TOKEN OF THEIR APPRECIATION OF HIS  
UNWEARIED EXERTIONS  
TO PROMOTE THE BEST INTERESTS  
OF THEIR ASSOCIATION.

The Dr. ascended the platform amidst great applause, and delivered one of those brilliant impromptus for which he is famed, and concluded with these words: "Gentlemen, I feel that I have far transgressed the limits which the occasion would prescribe, and which I had proposed to myself when I commenced speaking. Permit me then, in conclusion, again to express to you my grateful acknowledgments for the uniform kindness which you have evinced towards me, and to assure you, that intrinsically valuable as is the elegant and highly finished service which you have presented, in my estimation it has an untold value—ininitely beyond what costly material or exquisite workmanship can give—as the token of your esteem—the testimony of your regard.

O! the value of that which is given unsought  
Is not in the ore or the art,  
For it tells of kind feelings that gold never brought,  
And breathes the pure warmth of the heart.  
And in mem'ry's sad musings 'twill call up sweet  
dreams  
Of those that are absent or dead,  
And brighten life's darkness with sunshine-like gleams  
Of joy that was once but has fled."

### PRIZE MEDAL.

Although late, we think it right to record the interesting fact of a Gold Medal being presented a few months since to *Wm. Hutton, Esq.*, late of Belleville, by the Johnstown Agricultural Society. The medal is thus described by the *Picton Sun*:—

"We were shown a few days ago the gold medal presented by the Johnstown District Agricultural Society for the best essay on "Agriculture as a Pursuit" to *Wm. Hutton, Esq.*, late of the County of Hastings. It is made of very fine gold, weighing one oz. and seven dwts. and is about  $2\frac{1}{4}$  inches in diameter. On one side there is engraved "Provincial Exhibition of Upper Canada held at Brockville in September, 1851, running around the border. In the centre, "Presented to *Wm. Hutton*, of Belleville, C. W., for the best essay on Agriculture as a Pursuit, by the Johnstown District Agricultural Society. On the reverse a sheaf of wheat, "Canada" with a group of cattle, pigs, sheep, &c., a man ploughing, a farm-house and barn in the distance, and a clump of maple

and cedar trees on each side, with the rose, thistle, and shamrock, formed into a wreath on the outer edge. This beautiful medal was designed by *Dr. Reynolds* of Brockville, and the workmanship is by *Mr. Townsend* of Montreal. It is one of the most beautiful specimens of workmanship we have ever seen, and reflects the highest credit on the artist, while the design is the happiest thing of the kind that could be conceived.

Every farmer should be proud to know that the importance of his calling is looked upon in such a light as the presentation of a medal like that we have noticed above indicates. With a spirit of emulation among neighbouring societies to excel, and a tangible wish to disseminate information, such as the presentation of this medal gives, and a special department of the government for furthering the interests of agriculturists, they as a class ought to rejoice to know that they are beginning to occupy their true position in the country.

### WEIGHT OF A DURHAM STEER.

WOODHILL, Waterdown, Jan. 8, 1853.

DEAR SIR,—As the Journal of late has contained some discussion upon the relative value of Short Horns, Herefords, and Devons, I beg to transmit a short statement of a thorough-bred Durham Steer, bred and lately slaughtered here.

My own firm, deliberate opinion, gives a decided preference to thorough-bred improved Durhams, *of the right stamp*, and this *for all purposes*; but I should indeed be greatly ashamed, were I to make any depreciating remarks upon other breeds, which may justly find favor with other breeders.

I have no doubt that in the long run, the *best paying* breed will ultimately prevail; and we have only to bear in remembrance that one breed may thrive and pay well, where another would prove far less successful.

The Steer in question was a white bull Calf, dropped in April, 1849, and not entirely pleasing me in his points, I had him altered. This Steer never tasted turnips or grain, nor was he ever *pampered* in any way. In fact he got bare justice, even in his ordinary grazing. He was slaughtered about the middle of December last, taken direct from a December pasture. His net weight was as under:—

Four Quarters,	- - -	900 lbs.
Tallow,	- - -	80 "
Hide,	- - -	100 "

1080

I am aware that this has no pretensions to being called anything remarkable, but taking into account his age, *three*, rising *four*, and the

total absence of extra feed, or indeed of any feed, beyond ordinary farm pasture, I consider it to be a very fair farmer's return. The quality of the beef was *first rate*, tender, juicy, and finely *marbled*.

Yours truly,  
ADAM FERGUSON.

CORRECTION.—MR. VAIL'S SALE.

In the list of Mr. Vail's sale of his herd of Short-horns, copied from an American contemporary, into our December number, an error occurs of sufficient importance to require correction. The heifer "*Wil-dam* 6th," No. 23 in the list, is reported as being purchased by a Mr. Perkins, while the real purchaser was, we are truly glad to learn, our respected and enterprising countryman, *Hon. Adam Fergusson, of Woodhill, Canada West*. It is a fortunate circumstance that so fine and promising an animal has been purchased for this country, and we look forward with confidence to the time when Mr. Fergusson will be able to send us accounts, similar to that contained in the preceding article, of well-fattened Stock fed only on the *ordinary pastures* of his farm. We are also glad to observe that several of Mr. Vail's herd were purchased by *Mr. Parsons, of Guelph*; so that we have a good chance of being pretty well supplied with some of the *best short horn blood ever imported from England*.

The following explanatory note, which we received from Mr. Fergusson, should have appeared in our last number, but was inadvertently mislaid.

*Editor of the Agriculturist :*

WOODHILL, December 16, 1852.

DEAR SIR,—I have just received the December No. of the *Agriculturist*, which is really a most creditable and respectable publication, in its renewed garb, and I trust will be well supported.

I am *very sorry* that you should have inserted a *spurious* statement of Mr. Vail's sale. He writes me that the *only two* papers which are *warranted* correct, are those of Mr. Tucker, Albany, and Mr. Allen, New York. His fine Heifer, which I purchased there (No. 23), is given to a Mr. Perkins, of whom I know nothing. It is a great injury to me, as I may be justly, or at least feaſably, charged with duplicity, in asserting that I had made such a purchase. Mr. Vail is taking steps to have it explained, as it really is of considerable importance it should be put right. *Wil-dam* is a symmetrical Heifer, and I hope is in calf to young *Kirk-leavington*, which should produce something extra. The Bull *Victor*, which I bought in summer, is improving in size and beauty. He

is recorded in the *English Herd Book* (No. 12,268), and I believe is the *first and only* animal so recorded *in his own individuality*, certainly in *Canada*, and I believe I may say in the United States.

I write in haste.

Yours truly,  
ADAM FERGUSON.

#### PRINCIPLES OF BREEDING.

*To the Editor of the Agriculturist.*

SIR,—This communication is intended to counteract erroneous ideas which very generally prevail with respect to the improvement and crossing of our domestic animals.

As I cannot express myself better than Professor Low has done in "*Elements of Practical Agriculture*," I will quote that work with a few additional remarks.

"When a cross is made, it should be with a male of a superior breed; and in this case, the first cross will be almost always a good animal, but in breeding from the progeny of this cross, expectation will often be disappointed. Not only do the good qualities of the first cross not always remain in the progeny, but often there are found in it defects which cannot be traced to the parents. To secure the benefits of the cross, we should not again resort to the males of the inferior stock, because it might be found that while we had injured the original breed, we had not substituted a better in its stead. The rule therefore should be, to cover the first cross with a superior male of the same breed, and so on, until the good characters of that breed became permanent in the progeny. This is said to be breeding up to the superior stock."

It is too often the custom to keep a male of the first cross for breeding purposes, and as his produce is quite inferior, this tends to create a prejudice against improving and improved breeds. It is the blood that makes the improvement—and a very middling looking animal, well bred, will get better stock than a much larger and finer looking one but one quarter or one half bred.

"In crossing, the essential characters of form are imprinted on the offspring by the male; and it is surprising in how great a degree this imprinting of better characters takes place when a male of superior breeding is employed. A first cross between a short horned bull for example, fully bred, and a very ordinary cow, produces, not often, but generally, a fine animal, with an extraordinary aptitude to fatten. But the benefit may end with the progeny, if we do not again cover with a male of superior breed, and so on until the good characters become permanent."



Though the female should not be neglected, it is the male that makes the greatest improvement, and a good male, with a poor female, will make better stock than a good female with a poor male.

There is also, among many, a prejudice against crossing the Leicester and South Down sheep, because say they, they so soon become worthless—and the Report of the County of Wellington published in the *Agriculturist* of June tends to increase this.

Now this cross is known to make a most valuable sheep for general purposes, but if not attended to, they will undoubtedly run out sooner than either of the original breeds kept pure—and this is the case with all crosses.

The proper method when a farmer wishes to keep this kind of sheep is to breed alternately from rams of the original breeds.

I remain, Sir,

Yours, &c., C.

January, 1853.

#### BONE MANURE.

(Read before a recent meeting of the Frontenac Agricultural Society, at Kingston.)

GENTLEMEN,—

I am sorry to say that although I have used my best endeavor to collect information on the subject of Bone dust, I have not been so successful as I could have wished, owing in the first place to its being as yet little used by the agriculturists in this country with whom I have corresponded on the subject; and, secondly, to the fact of its being applied so extensively in England to the culture of turnips, that I could find little mention of it in "Steven's Book of the Farm," except in connection with turnip husbandry. I shall, therefore, only quote such paragraphs from him as relate to the preparing of bone-dust for manure, it being my opinion, though I speak it with diffidence, that this country generally, and our portion of it particularly, is not suited to the cultivation of turnips on a large scale. On this point I may be mistaken, and it would be a matter of great gratification to me, should what I have now said induce some of our farmers who have tried that kind of culture, and have found the crop a profitable one for any consecutive number of years, sufficient to prove it was so from the effect of proper cultivation, and not of mere local advantages, or the result of a chance favorable season, to come forward and give such practical information through our agricultural papers, as may lead to the general culture of that very useful root.

I shall now proceed to consider how bone-dust can be used beneficially to the soil, and profit-

ably to the farmer in this country, otherwise than in the culture of turnips; and for this purpose I shall quote a passage from an excellent article in the *Canadian Agriculturist*, the whole of which, being written by Professors Croft and Buckland, I need hardly add, merits your most attentive perusal.

"Bone manure is peculiarly adapted to exhausted arable land, and upon poor unproductive pastures, its application has been attended with the most striking results. The soil in such cases having been exhausted of its phosphates by repeated cropping, or as in the case of pasture land by the gradual deprivation of these materials by the milk, cheese, and bones of animals, that have been sold off through a long series of years without any adequate return in the form of manure; a liberal dressing of bone dust speedily restores the equilibrium, by returning to the weakened soil, the very ingredients of which it had been deprived."

You will here observe that particular mention is made of bone-dust as a manure for exhausted pasture, and as such I think it can be more profitably used by us than plaster, in support of which I find mention made of it in a little book called "Walks and talks of an American Farmer in England," written by F. A. Olmstead, who seems well acquainted with practical agriculture, he there says that it is extensively used in Cheshire on pasture land, and that the effect of it is so lasting as to be very perceptible eight and nine years after it has been applied. Stevens also says that when used in large quantities, its effects may be seen twenty years after, its superiority to plaster which requires sowing every year, is therefore self-evident.

I shall conclude by reading the passages from Stevens before referred to, calling your particular attention to paragraph 3,236, where a method of preparing the bones without grinding is mentioned which can easily be carried into effect by any farmer.

"Bone dust has now established itself as a valuable manure, and with the exception of farm yard dung, there is no substance upon which more implicit reliance may be placed as a fertilizer of the soil, not even excepting guano.

"One of its most valuable qualities is its durability, and in this respect it is superior to farm dung and guano; even in its reduced state when applied in large quantities, as 1½ tons to the acre, as used by the Cheshire farmers, its effects are visible 20 years after; this results from the slow decomposition of its inorganic matter in the soil.

"It has been ascertained by analysis that 1 ton of bone-dust equals 30 tons of dung; but as only 16 bushels of bone-dust are applied to the acre, which, at 47 lbs. per bushel, weigh 7 cwt., this quantity is equal to 10½ tons of dung.

"Mix vitriol with twice its bulk of water, put into a large tub double the weight of bone-dust, and pour the mixture of vitriol gradually over it, and in time the bone-dust will be entirely dissolved. The mass may be dried with ashes,

saw-dust, or vegetable mould. Uncrushed bones will answer as well, but take longer preparing.

"Or, (and this is the paragraph to which I particularly directed your notice) mix four cart loads of bones with as many of sand, and place in a flat topped heap, then thoroughly drench with water. At the end of a fortnight turn over the heap and water afresh; in a month few of the bones will remain whole. In this way large bones may be reduced, but broken bones will of course reduce more quickly."

LONGUEUIL.

#### DEVON CATTLE.

*Editor of the Agriculturist:*

DEAR SIR,—As so much is being said in the *Agriculturist*, by the admirers of Short Horn and Hereford cattle, in favor of their favorite breed; perhaps you will allow me to put in a word in favor of the Devons.

When I was living in the South West of England we usually milked about thirty cows, and at one time a large proportion of them were Short Horns,—they all lived alike—Short Horns and Devons side by side; the land was of excellent quality; the climate as is well known, mild, and humid, and grass almost always plentiful. We finally discarded the Short Horns for the following reasons:—

1st. Because we could keep three Devons on the same quantity of food, which two Short Horns required.

2nd. Because we found the milk from three Devon cows worth more, especially for butter making, than the milk from two Short Horns.

3rd. Because we found the Devons much less subject to barrenness.

4th. Because among a hundred Devon calves you would hardly find one inferior, all would be uniform and exquisitely symmetrical; but we could not get a dozen Short Horn calves without some coarse and inferior ones among them.

5th. Because when fat the Devons brought about 6d per stone of 8 lbs more than any other cattle, excepting Scots.

Nevertheless I believe the very best tribes of Short Horns are the most beautiful cattle in existence, it would, I think, look like prejudice to deny it; but do they suit the Canadian farmers? Except a farmer can afford to purchase a bull every two years and pay two or three hundred dollars for him, for he must be thorough-bred (or full-blooded as the Canadians term it) his herd will soon deteriorate; and badly bred, long, gaunt Short Horns, are the worst things ever a farmer had on his place. Crosses after the first never answer; no breed that I know anything of require so much care and judgment.

But crosses from the Devon bull and the native cattle answer better in my opinion, though inferior to pure Devons, they are seldom coarse,

never long legged, and are generally good handlers.

The Devons are equally as hardy in my opinion as the natives. Your respectable correspondent Mr. R. F. Cook, seems to class them with those breeds that require nursing, and high priced food in winter; but I must beg leave to differ from him. As to Herefords I have had no experience among them, what I have seen at Agricultural Shows in England were very fine animals. My only additional observation is, that I do not at present own any Devon cattle; and therefore am not pleading to fill my own pockets.

I am, dear Sir,

Yours, most respectfully,  
W. H.

#### LETTER FROM MR. SOTHAM.

*To the Editor of the Canadian Agriculturist.*

DEAR SIR,—I have no desire to dispute your valuable correspondent Mr. Cameron, as I think he must be mistaken in the place of Showing; I never heard of a bull or breeding cow taking prizes at Smithfield. If so, I shall be very much obliged to Mr. C. to refer me to it. "Bamboo" may have won many premiums, but did he ever show against a Hereford or Devon, if not, there can be no comparison. These two breeds have never come in competition with each other, except at Smithfield, but what the Herefords have *invariably proved triumphant*.

My bull Tromp, now owned by Hon. Allen Ayrault and one of the "Parsons Rhinoceros tribe," took first prize as a calf, as a yearling, as a two year old, and as an aged bull, but did not compete with Short Horns. I should like to see him shown against "Bamboo," both in the same condition, *high, low, or moderate*. I should have much pleasure in seeing either of my cows Silla, Rose, Pretty Maid, Sally, Jenny Lind, Bombazine, or Cynthia, shown against Butter Cup, and let merit prove which was champion. Mr. Parsons may again say the "distance" is too far between them, but if Short Horn men feel inclined they can meet. I hope Mr. Cameron will advance some way of bringing them into fair competition, he has only to suggest, and I think he will be met. As Mr. C. has commenced on the merits of this breed I hope he will continue it. I will not accuse him of "untruth," if he is sometimes "mistaken." He may not be in this instance and I may be proved "in ignorance."

I am dear Sir,

Yours Sincerely,  
WM. HY. SOTHAM.

Piffardinia, N. Y. Dec. 1852.



## CANE AND GRAPE SUGAR.

*Editor Canadian Agriculturist:*

DEAR SIR,—I notice in your January number a short paper descriptive of a process for preparing sugar from Indian Corn and Oil of Vitriol. The process is by no means new, having been invented by Kirchhoff at the end of last century; but from the description above referred to, most persons unacquainted with the subject would be led to believe that the sugar produced is identical with that of the cane, the beet, the maple, and the corn stalk. Such is not the case, it is grape sugar which is formed;—that peculiar modification which exists in the grape, raisins, figs, honey, and in almost all fruits, and which does not possess more than a small fraction of the sweetness of ordinary cane sugar. It cannot therefore be applied to all the same purposes as this latter kind, although in some few instances it might perhaps be usefully employed. If a person desirous of having his cup of tea rather sweet, were to employ the starch sugar, he would have to fill his cup with it first, and then add the tea.

I may also take this opportunity of pointing out a rather serious error into which your correspondent, Mr. Moyle, has fallen. He seems to have no very distinct ideas respecting the difference between phosphorus and phosphoric acid; in the lime stone alluded to, the phosphoric acid is combined with lime, and is not in the slightest degree altered by any heat to which it may be subjected. The experiment with decaying phosphorescent wood has no bearing on the question whatever.

I remain,  
Yours, very truly,

HENRY CROFT.

UNIVERSITY,  
Toronto, Jan. 16, 1853.

## HORTICULTURE.

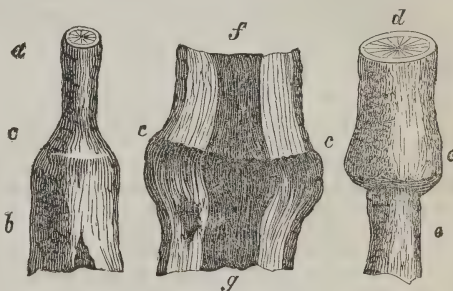
## PROPAGATING BY GRAFTING.

When particular sorts of shrubs and trees cannot be procured from seed, or when the seedlings would be a number of years in blowing or fruiting, slips of these sorts, or even buds, are cut off, and instead of planting them in the ground, they are fitted to a cut made in another suitable tree or shrub, called the *stock*, by an operation variously performed, termed *grafting*, which can only be properly taught by a master and not by a book.

The principal upon which the union takes place is, that the pulp from the cutting descends to its junction with the stock, where, being excluded from the air and light by a ball of prepared clay, it forms woody fibres instead of roots as it might have done in the ground; while at the same time, the sap from the stock rises into the cutting, whose leaves convert it into pulp.

When the texture of the wood is softer in the cutting than in the stock, the latter interrupts the descent of the pulp, and forms a bulging scar; when the cutting has a harder texture than the stock, the contrary takes place.

In the practice of grafting, only the sorts of the same or similar species succeed. A pear cutting for instance, may be grafted on a quince or apple stock; but not a plum on a cherry stock. The apple, however, succeeds when grafted on the hawthorn or the mountain ash, though much better when grafted on a crab stock.



a, the Pavia lutea, a shrub, which never attains the size of a tree, cleft-grafted on the horse-chestnut; b, a tree of great size. It is remarkable that the Pavia is much enlarged near the junction c, like a tree near the ground, a circumstance which would not have occurred but for the graft. The bark of each remains distinct. d, the white-lime tree grafted on the European lime tree, e; each growing in diameter according to its particular nature, without any intermixture at the line of graft, c; a vertice section. f, g, of an almond tree, f, cleft-grafted on a prunus, g, showing that not one of the characteristics of the two individuals ever pass the line of junction. c, c, any more than the spur grafted on the comb of the cock ever changes its hard horny nature for the soft fleshy nature of the comb.

When one branch of a growing tree or shrub is grafted to the branch of another growing plant near it, the process is termed *inarching*, but this system is seldom practised, except with rare and choice plants. When a bud from one tree is inserted into the bark of another tree, it is termed *budding*, and this is exceedingly advantageous to rose trees, for a fine standard rose may thus be obtained by simply inserting buds of good sorts on a stock of the wild rose and the sweetbrier. It is also very useful in filling up the breaches in peach trees trained to the wall, which are sometimes occasioned by the decaying of a large branch.

## PLANTING.

It has been previously suggested that this operation should be performed in cloudy or showery weather. It must never be forgotten, in planting, that a plant is a *living* thing. For this reason it should not be kept out of the ground, or its roots allowed to dry, or these last be much crippled. The new earth should also be placed about the roots with great care and gentleness, and not pressed upon them too violently. October and November are the best months for planting trees and shrubs, because they are then comparatively at rest, and the weather is usually dull and quiet. Where little check is required to be given, balls of earth to the roots must be obtained, if possible, and these

not crushed or pressed against too rudely in planting.

Some recommend the process of puddling, which consists in mixing up soil and water into a kind of thin paste, and dipping the roots of the plants in this; or, in the cases of larger things, planting them wholly in a hole thus prepared. As ordinarily pursued, however, the plants might as well be placed in mortar and cement; for, as soon as the mud dries, it becomes a hard cake, which neither water nor air can thoroughly penetrate, and which will partly or altogether prevent the roots from extending. If adopted at all, it should only be in some modified manner for such thing as cabbages and broccoli.

#### PRUNING.

Pruning is for the purpose of preventing extra luxuriance, of throwing plants into a flowering or fruit-bearing state, or of preserving some kinds from degeneracy. Very strong and very weakly shoots alike require most pruning; for the one class will be vigorous, and the other too feeble, to be productive. But the sickly shoots of plants should be pruned back much closer than the luxuriant ones; for the object is to produce entirely new ones in the former case, while only shorter branches are desired in the latter, and pruning would merely tend to develope such as were similarly strong.

It is lateral branches and spurs that mostly bear flowers and fruit in some plants, and pruning is intended to multiply these. Hybrid plants and those of which the sorts have been greatly improved by culture, are such as chiefly require pruning. Stopping the *young*, tender shoots of many kinds may sometimes be preferable, as it hinders the plants from wasting their strength unduly. Even removing the buds that are not required to develope just after they have burst, may often be advantageously practised. Indeed, summer pruning is of more consequence than is generally believed for plants that will not bleed much, especially if they have to be trained, or if any particular kind of new growth is wanted. Late in the autumn, and early in the winter or spring, are, however, the principal times for pruning. It may be extended to the roots in certain cases, where extreme woodiness is wanted to be restrained.

#### FLOWERING AND FRUITING.

Both of these states are generally to be brought about where they do not naturally occur with sufficient readiness or force, by a series of checks. Whatever promotes strong or rank growth is decidedly against them. The perfect ripening of the wood, and in fact, the complete maturity of all the parts, such as a sunny summer and an exposed situation will produce, are necessary to the full development of these tendencies. Transplanting, withholding manure or water, judicious pruning, exposure to the sun and air, keeping the roots near the surface of the ground, slightly raising the plant above the general level, shallow soil, and thorough draining, are the best things to produce fertility, when it does not show

itself at the usual period; and, with the exception of stinting the supply of manure and water, they will be beneficial at all times. Deep planting or imperfect drainage, are exceedingly bad; and manure will ordinarily be adverse to flowers. For plants in pots that are prone to become too vigorous, cramping the roots, diminishing the supplies of water, and putting them a good deal in the open sunshine, will do much towards restoring them to the desired condition.

#### SHELTERING AND PROTECTING.

Shelter from winds should be given by loose and meshy, not solid materials. Trees and shrubs are better for the purpose than walls, as they stop the force of the currents, while walls only divert it and increase its power. Hurdles filled in loosely with reeds or rough laths, or branches of pine or furze, are also preferable, in point of shelter, to closely boarded ones, for the same reason.

Shade from the sun's rays should, in like manner, be thin and partial only. A few fir branches stuck around the plants to be shaded, or some very thin canvass or gauze stretched over it, will generally suffice; the object being merely to break the extreme power of the sun's rays, and not to shut them out entirely. Anything dense or opaque is therefore objectionable. Mulching applied over the roots, to keep the soil very moist, will be a good substitute for a shade in some cases. Plants rarely want shading, unless when they have been newly removed or are in bloom.

Protection from frost may be secured by simply intercepting the radiating process. Whatever keeps plants moderately dry at the roots will greatly help to protect them; for frosts act far less upon them at that time than when they are in a wet state. A temporary pent-house or a small tent-like canopy, open at the sides, will occasionally be sufficient both to keep plants dry and prevent radiation. But in very severe weather they may be covered up more closely, bearing in mind that the point always to attain is to stop radiation rather than to communicate additional heat.

When plants, by a sudden occurrence of frost or any other accident, become slightly frozen, and their tissue is not actually destroyed, they may be saved by watering them with cold water just before sun-rise in the morning, and covering them over with a mat or other object which will keep them in the dark until they have gradually thawed. The design is to prevent the sun from shining upon them until they are quite restored.

#### ROTATION OF CROPS.

Such an arrangement as the change of crops becomes necessary because different plants exhaust the soil of particular elements, and are more or less gross and extravagant in their habits; so that where they have grown one year they will have so much withdrawn the kind of food they require as to be incapable of attaining any perfection on the same plot in the following season. Other kinds, however, coming after them, may not need anything like so much



of the same element, or may not even want it at all. The practice likewise causes a saving of manure, for when the food a crop requires has not been abstracted from the soil by a previous crop, manure will sometimes be superfluous.—Potatoes, scarlet-runners, broccoli, and the cabbage tribe, particularly demand a fresh soil yearly. Pansies, hyacinths, and other bulbs and florists' flowers that are of hybrid origin, are equally fastidious, if they are to be grown to great perfection.

By ridging up the ground in winter for vegetable crops, and thus admitting new gases from the air, and salts from snow or rain, the rotation plan of cropping becomes less necessary, though it may never be entirely dispensed with. Perhaps when the precise food which every individual crop requires, and the manures fully capable of supplying such are more thoroughly known and experimentally tested, the necessity for changing yearly the vegetable tenants of any particular piece of land that best suits a certain tribe, may be almost if not altogether annihilated."

**IMPROVEMENT IN BRICK MAKING.**—An invention has, it is stated, just been patented in England, for the adaptation of a preparation of coke and other substances, by which bricks, paving slabs, door and stair steps, tiles, pipes, blocks, railway sleepers and other articles of general use by builders, &c., can be produced with a perfection and at a cost which it is expected by the inventor will effect a complete revolution in the building trade. The price at which it is proposed to offer the coke brick to the public is scarcely one-third of the cost of the clay brick, while in point of durability it is superior to the best article supplied from the kilns.

**FLAT ROOFS.**—All the new houses which have been built in New York recently, have what are termed flat roofs. The roof is nearly level, and old humped roofs are fast disappearing, we wonder how they ever came into use. The inventor of them must have been a man of comical ideas. The flat roofs are covered with tin and well painted. If a fire takes place in a building it is easy to walk and work on the flat roof so as to command the fire if it be in the adjacent building; this cannot be done on peaked roofs. Flat roofs are cheaper and more convenient in every respect. We advise all those who intend to build new houses to have flat roofs upon them. It is far better to have a flush story at the top of the building than a peaked cramped up garret which is only comfortable for travelling on the hands and knees.—*Scientific American*.

**TAKE CARE OF YOUR FEET.**—Of all parts of the body, says Dr. Robertson, there is not one which ought to be so carefully attended to as the feet. Every person knows from experience that colds, and many other diseases which proceed from the same, are attributed to cold feet. The feet are at such a distance from the "wheel at the cistern" of the system, that the circulation of the blood

may be very easily checked. Yet for all this, and although every person of common sense should be aware of the truth of what we have stated, there is no part of the human body so much trifled with as the feet. The young, and would-be-genteel-footed, cramp their feet into thin-soled pinching boots and shoes, in order to display neat feet, in the fashionable sense of the term. There is one great evil, against which every person should be on their guard, and it is one which is not often guarded against—we mean the change of warm for cold shoes or boots. A change is often made from thick to thin soled shoes, without reflecting on the consequences that might ensue. In cold weather, boots and shoes made of good thick leather, both in soles and uppers, should be worn by all. Water-tights are not good if they are tight as well; india-rubber over-shoes should never be worn except in wet splashy weather, and then not very long at once. It is hurtful to the feet to wear any covering that is air-tight over them, and for this reason india-rubber should be worn as seldom as possible. No part of the body should be allowed to have a covering that entirely obstructed the passage of the carbonic gas from the pores of the skin outwards, and the moderate passage of air inwards to the skin. Life can be destroyed in a very short time, by entirely closing up the pores of the skin. Good warm stockings and thick-soled boots and shoes are conservatories of health, and consequently of human happiness.—*Scientific American*.

**LIFE PRESERVERS.**—One of the most useful and important inventions of the present day is the Life-Preserving Seats of Mr. George P. Tewksbury. We know of nothing since the invention of the Davy Lamp by Sir Humphrey Davy that can be at all compared with the present invention, in so far as relates to the preservation of human life. These seats are in the form of stools and settees, and are so constructed that whilst they answer the purpose of ordinary stools and settees, take no more room, and are just as portable, they possess such buoyancy that one stool will easily support one person on the surface of the water, and a settee that will seat three persons will support the same number. No steamboat, ship, or pleasure boat should be without an adequate supply. The government, we understand, are about adopting them in the ships of war and other government vessels, and the time must soon come when they will be in universal demand, and their inventor looked upon as one of the greatest benefactors of our race. We are much mistaken if the Royal Humane Society of England does not show its appreciation of Mr. Tewksbury's invention by some substantial token of acknowledgment. We trust, moreover, that our citizens will not be slow in manifesting their gratitude for the invaluable boon thus conferred, and not leave it for posterity to do, as has been the case with other benefactors. Another invention by the same gentleman, partaking of the same character, is a life-boat constructed on new principles, and far surpassing any other now in use. Indeed, so admirably is it calculated for its important office, that under no circumstances can it founder, sink, or be inverted, unless it be completely broken.—*International*.

The *Scientific American* thinks cast iron pavements for roadways will supersede the McAdams, Russ and all stone pavements now in use.

## CENSUS RETURNS.

We publish below an abstract of the population of the Townships of Upper Canada, as exhibited by the last census.

## POPULATION OF UPPER CANADA.

Townships.	Population	Townships.	Population	*Indian Territory	678	Orford	1566
Amherst Island	1287	Aldborough	1226	Total Grey	13217	Raleigh	2460
Camden	6975	Bayham	5092	Augusta	5154	Romney	1023
Earnestown	5111	Dunwich	1948	Edwardsburgh	4779	Tilbury East	
Sheffield	1792	Dorchester	1477	Gower, South	863	Zone with Camden	2070
Bath, about 620		Malahide	4050	Oxford	4496	Chatham Town	
Total Addington	15165	Southwold	5063	Wolfred	3259	Total of Kent	17469
		Yarmouth	5288	Prescott, Town	2156	Bosanquet	1093
Brantford	6410	St Thomas Village	1274	Total Grenville	20707	Brooke	511
Brantford, Town	3877	Total Elgin	25418	Canborough	1151	Dawn	558
Burlford	4433	Anderdon	1199	Cayuga, North	2013	Enniskillen	238
Dumfries, South	4297	Colchester	1870	Cayuga, South	824	Euphemia	1457
Oakland	840	Gosfield	1808	Dunn	820	Moore	1258
Onondaga	1858	Maidstone	1167	Moulton	1984	Plympton	1151
Paris, Village	1890	Malden	1315	Oneida	2817	Sarnia	1384
Tuscarora	1821	Mersea	1193	Rainham	1618	Sombra	738
Total of Brant	25426	Rochester	788	Sherbrooke	3636	Warwick	2669
		Sandwich	4928	Walpole	3583	Islands	
Arran	149	Amherstburg, Town	1880	Total Haldimand	18788	Total Lambton	10815
Brant	621	Tilbury, West	675	Esquesing	5225	Bathurst	2868
Bruce	100	Total Essex	16817	Trafalgar	6782	Sherbrooke South	487
Carrick	} not settled.	Clarendon	} not settled	Nassageweya	2237	Beckwith	2540
Culross		Barrie		Nelson	4078	Burgess North	1110
Elderslie	14	Kennebec		Total Halton	18322	Dalhousie	1421
Greenock	244	Palmerston		Belleville	4569	Sherbrooke North	399
Huron	236	Olden		Hungerford	3124	Levant	98
Kincardine	1449	Oso		Huntingdon	2548	Drummond	2648
Kinloss	47	Howe Island	} 5235	Madoc	} 2761	Elmsley North	2031
Saugeen	277	Kingston		Elzivir		Lanark	2649
Total of Bruce	2837	Loughborough	2003	Tudor	} 635	Darling	670
Fitzroy	2807	Pittsburg	3258	Marmora		Montague	3356
Gloucester	3005	Bedford	1118	Rawdon	3097	Packenham	1868
Goulbourne	2525	Portland	2388	Sidney	4574	Ramsay	3256
Gower, North	1777	Hinchinbrooke	364	Thurlow	4460	Perth Town	1916
Huntley	2519	Storington	2130	Tyendenaga	6200	Total of Lanark	27317
March	1025	Wolfe's Island	2654	Grimsthorpe		Bastard	3448
Marlborough	2053	Total Frontenac	19150	Lake		Burgess, South	276
Nepean	3800	Lancaster	4023	Total Hastings	31977	Crosby, North	1785
Osgoode	3050	Charlottenburg	5537	Hay	985	Crosby, South	1578
Richmond	434	Lochiel	4174	Stephen	742	Elizabethtown	7087
Tarbolton	542	Kenyon	3842	McGillivray	1708	Elmsley	5208
Total Carleton	23637	Total Glengary	17596	Biddulph	2081	Escott	1399
Matilda	4198	Artemesia	733	Usborne	1484	Kitley	3523
Mountain	2764	Bentnick	1272	Howick		Leeds	2283
Williamsburg	4284	Collingwood	545	McKillop	848	Lansdowne	2439
Winchester	2565	Derby	471	Grey		Yonge	3661
Total Dundas	13811	Egremont	665	Morris		Brockville, Town	3246
Cartwright	1750	Euphrasia	60	Turnbury		Total of Leeds	30280
Cavan	4438	Glenelg	1250	Ashfield	907	Adolphustown	718
Clarke	6190	Holland	954	Wawanosh	722	Fredericksburgh	3166
Darlington	8005	Melanethon	450	Colborne	924	Richmond	4071
Hope	5299	Normanby	539	Hullet	955	Total of Lennox	7955
Manvers	2568	Osprey	486	Tuckersmith	1727	Caistor	1398
Port Hope, Town	2476	Proton		Stanley	2064	Clinton	2462
Total Durham	30732	St. Vincent	1601	Goderich	2715	Gainsborough	2538
		Sullivan	518	Goderich, Town	1329	Graham	3215
		Sydenham	2432	Total of Huron	19198	Grimsby	2448
				Camden	1434	Louth	1848
				Chatham	1768	Niagara	2250
				Dover E. and W.	1723	Niagara, Town	3340
				Harwich	2627	St. Catharines	4368
				Howard	2798	Total of Lincoln	23868
						Mosa	2075



## CENSUS RETURNS.—Continued.

Ekfrid	1792	Toronto Gore	1820
Carradoc	3118		
Metcalfe	1696	Total of Peel	24816
Adelaide	1079		
Williams	2292	Blanchard	2780
Lobo	2445	Hibbert	1191
Nissouri	1832	Fullarton	1750
Dorchester	2570	Downie	} 2727
Delaware	1861	Downie, Gore	
Westminster	5069	Logan	698
London	6736	Ellice	1328
		Easthope, North	2341
Total of Middle-		Easthope, South	1797
sex	32864	Elma	
		Wallace	
Brighton	3725	Mornington	933
Cramabe	2993		
Haldimand	4634	Total of Perth	15545
Alnwick	836		
Seymour	2781	Belmont	248
Percy	2605	Burleigh with	
Hamilton	5008	Dummer.	
Monaghan, South	1051	Douro	1676
Murray	3725	Dummer	1600
Cobourg, Town	3871	Harvey with Smith	
		Methven with Bel-	
Total of North-		mont	
umberland	31229	Smith	2392
		Monaghan	905
Houghton	1599	Asphodel	1678
Middleton	1720	Ennismore	675
Charlottetown	2780	Otonabee	3872
Windham	2900	Peterboro' Town	2191
Townsend	4935		
Woodhouse	2894	Total Peterboro'	15237
Walsingham	3090		
Long Point		Caledonia	958
Rymore's Island		Hawkesbury West	2665
Simcoe, Town	1452	Hawkesbury East	3029
		Longueuil	1406
Total of Norfolk	21281	Alfred	584
		Plantagenet North	1292
Whitby	7996	Plantagenet South	643
Pickering	6737		
Uxbridge	2289	Total Prescott	10487
Reach	3897		
Brock	3518	Ameliasburg	3286
Thorah	1146	Athol	1621
Rama and Mara	1403	Hallowell	3203
Seugog	415	Hillier	2962
Scott	1028	Marysburg	3542
Georgina	1005	Sophiasburg	2834
Oshawa	1142	Pictou Town	1569
Total of Ontario	30576	Total of Prince	
		Edward	18887
Zorra, East	3200		
Zorra, West	3302	Admaston	685
Oxford, North	1378	Bagot	734
Oxford, East	2210	Blythefield	200
Oxford, West	1894	Bromley	687
Dereham	3614	Horton	1142
Norwich	5239	Ross	708
Blenheim	4995	McNab	1513
Blandford	1356	Westmeath	1152
Nissouri, East	2118	Pembroke	633
Woodstock, Town	2112	Stafford	281
Ingersoll, Town	1190	Brougham	438
		Gratian	554
Total of Oxford	32638	Wilberforce	688
Albion	4281	Total of Renfrew	9415
Caledon	3707		
Chinguacousy	7469	Cumberland	1659
Toronto	7539	Clarence	508

## CENSUS RETURNS.—Continued.

Cambridge	200	Guelph	2879
Russell	503	Guelph, Town	1860
		Nichol	2450
Total of Russell	2870	Garrafraxa	2083
Adjala	1990	Eramosa	2350
Essa	1507	Peel	2435
Flos	545	Maryborough	994
Gwillimbury	3894	Minto	} 1803
Innisfil	2341	Arthur	
Mono	1116	Luther	
Medonte	2689	Amaranth	
Mulmur	766	Pilkington	500
Nottawasaga	1837		1990
Orillia	} 725	Total, Wellington	29796
Matchedash			
Oro	2027	Pelham	2400
Sunnidale	205	Thorold	2735
Tay	600	Stamford	3311
Tecumseth	3998	Crowland	1478
Tosoronto	492	Willoughby	1352
Tiny	648	Wainfleet	1841
Vespra	626	Humberston	2201
Barrie, Town	1007	Bertie	2737
Total of Simcoe	27765	Chippewa	1193
		Thorold, Village	1091
Cornwall	4707	Total of Welland	20141
Osnabrock	4699		
Finch	1450	Beverly	5620
Roxburgh	2141	Flamboro, East	2913
Cornwall, Town	1646	Flamboro, West	3533
Total of Stormont	14643	Ancaster	4653
		Glandford	2008
Mariposa	3898	Binbrook	1737
Ops	2512	Salfleet	2801
Emily	2763	Barton	1735
Eldon	1320	Dundas, Town	3517
Fenelon	590		
Bexley	6	Total, Wentworth	28507
Verulam	571		
Sommerville		Etobicoke	3483
		Vaughan	7723
Total of Victoria	11657	Markham	7752
		Scarborough	4244
Waterloo	7698	York	10035
Wilnot	5297	King	6565
Woolwich	3092	Gwillimbury, N.	1176
Wellesley	3146	Gwillimbury, E.	3208
Dumfries, North	3476	Whitechurch	4758
Galt	2248		
Preston, Village	1180	Total of York	48944
Total of Waterloo	26537		
		City of Toronto	30775
Erin	3590	City of Kingston	11585
Puslinch	3862	City of Hamilton	14112
		Town of Bytown	7760
		Town of London	7035

## RECAPITULATION.

Addington	15165	Huron	19193
Brant	25426	Kent	17469
Bruce	2837	Lambton	10815
Carleton	23637	Lanark	27317
Dundas	13111	Leeds	30280
Durham	30732	Lennox	7955
Elgin	25418	Lincoln	23868
Essex	16817	Middlesex	32864
Frontenac	19150	Northumberland	31229
Glengarry	17596	Norfolk	21281
Grey	13217	Onario	30576
Grenville	20707	Oxford	32638
Haldimand	18788	Peel	24816
Halton	18322	Perth	15545
Hastings	31977	Peterboro	15237

## CENSUS RETURNS.—Continued.

Prescott	18487	Wentworth	28507
Prince Edward	18887	York	48944
Renfrew	9415	City of Toronto	30775
Russell	2870	City of Kingston	11585
Simcoe	27165	City of Hamilton	14112
Stormont	14643	Town of Bytown	7760
Victoria	11657	Town of London	7035
Waterloo	26037		
Wellington	26796	Total	952004
Welland	2014		

## MISCELLANY.

## THE PHILOSOPHY OF COOKERY.

*From Mrs. Hale's New Cook Book.*

MISS SEDGWICK has asserted, in some of her useful books, "the more intelligent a woman becomes, other things being equal, the more judiciously she will manage her domestic concerns." And we add, that the more knowledge a woman possesses of the great principles of morals, philosophy, and human happiness, the more importance she will attach to her station, and the name of "a good housekeeper." \* It is only the frivolous, and those who have been superficially educated, or only instructed in showy accomplishments, who despise and neglect the ordinary duties of life as beneath their notice. Such persons have not sufficient clearness of reason to see that "Domestic Economy" includes everything which is calculated to make people love home and feel happy there.

One of the first duties of woman in domestic life is to understand the quality of provisions and the preparation of wholesome food.

The powers of the mind, as well as those of the body, are greatly dependent on what we eat and drink. The stomach must be in health, or the brain cannot act with its utmost vigour and clearness, nor can there be strength of muscle to perform the purposes of the will.

But further, woman, to be qualified for the duty which Nature has assigned her, that of promoting the health, happiness, and improvement of her species, must understand the natural laws of the human constitution, and the causes which often render the efforts she makes to please the appetite of those she loves, the greatest injury which could be inflicted upon them. Often has the affectionate wife caused her husband a sleepless night and severe distress, which, had an enemy inflicted, she would scarcely have forgiven—because she has prepared for him food which did not agree with his constitution or habits.

And many a tender mother has, by pampering and inciting the passions of her young sons, laid the foundation of their future course of selfishness and profligacy.

If the true principles of preparing food were understood, these errors would not be committed, for the housekeeper would then feel sure that the best food was that which best nourished and kept the whole system in healthy action; and that

such food would be best relished, because, whenever the health is injured, the appetite is impaired or vitiated. She would no longer allow those kinds of food which reason and experience show are bad for the constitution, to appear at her table.

We have, therefore, sought to embody, from reliable sources,\* the philosophy of Cookery, and here give to those who consult our "New Book" such prominent facts as will help them in their researches after the true way of *living well and being well while they live.*

Modern discovery has proved that the stomach can create nothing; that it can no more furnish us with flesh out of food, in which, when swallowed, the elements of flesh are wanting, than the cook can send us up roast beef without the beef to roast. There was no doubt as to the cook and the beef, but the puzzle about the stomach came of our not knowing what matters various sorts of food really did contain; from our not observing the effects of particular kinds of food when eaten without anything else for some time, and from our not knowing the entire uses of food. But within the last few years measures and scales have told us these things with just the same certainty as they set out the suet and raisins, currants, flour, spices, and sugar of a plum-pudding, and in a quite popular explanation it may be said that we need food that as we breathe it may warm us, and to renew our bodies as they are wasted by labour. Each purpose needs a different kind of food. Our frames are wasted by labour and exercise; at every move some portion of our bodies is dissipated in the form either of gas or water; at every breath a portion of our blood is swallowed, it may be said, by one of the elements of the air, oxygen; and of strength giving food alone it is scarce possible to eat enough to feed at once the waste of our bodies and this hungry oxygen. With this oxygen our life is in some sort a continual battle; we must either supply it with especial food, or it will prey upon ourselves—a body wasted by starvation is simply eaten up by oxygen. It likes fat best, so the fat goes first; then the lean, then the brain; and if from so much waste, death did not result, the sinews and very bones would be lost in oxygen.

The more oxygen we breathe the more need we have to eat. Every one knows that cold air gives a keen appetite. Those who in town must tickle their palates with spices and pickles to get up some faint liking for a meal, by the sea, or on a hill-side, are hungry every hour in the day, and the languid appetite of summer, and crowded rooms, spring into vigour with the piercing cold and open air of winter. The reason of this hungriness of frosty air is simply that our lungs hold more of it than they do of hot air, and so we get more oxygen, a fact that any one can prove, by holding a little balloon half filled with air near the fire, it will soon swell up, showing that hot air needs more room than cold.

\* The term *housekeeper*, in this book, is used in its American significance, the same as "Mistress of the family," or "Lady of the house."

† I have followed chiefly the system of Dr. Andrew Combe on "Diet and Health," corroborated by the authority of Baron Liebig in his "Familiar Letters" and "Animal Chemistry."



But the oxygen does not use up our food and frames without doing us good service; as it devours it warms us. The fire in the grate is oxygen devouring carbon, whether in the shape of coals in a stove or fat in our bodies, the result of the struggle (if we may be allowed the phrase is heat.

In all parts of the world, at the Equator and the Poles, amid eternal ice and under a perpendicular sun, in the parched desert and on the fresh moist fields of temperate zones, the human blood is at the same heat; it neither boils nor freezes, and yet the body in cold air parts with its heat, and just as we can keep an earthenware bottle filled with boiling water hot, by wrapping it in a flannel, can we keep our bodies warm by covering them closely up in clothes. Furs, shawls, and horse cloths have no warmth in themselves, they but keep in the natural warmth of the body. Every traveller knows that starting without breakfast, or neglecting to dine on the road, he feels more than usually chilly; the effect is very much the same as if he sat to his meals on the same cold day in a room without a fire; the internal fuel, the food, which is the oil to feed life's warming lamp, is wanting. On this account, a starving man is far sooner frozen to death than one with food in his wallet. The unfed body rapidly cools down to the temperature of the atmosphere, just as the grate cools when the fire has gone out. Bodily heat is not produced in any one portion of the body, but in every atom of it. In a single minute about 25 pounds of blood are sent flowing through the lungs, there the whole mass meets the air, sucks in its oxygen, and speeding on carries to every portion of the frame the power which may be said to light up every atom of flesh, nerve, and bone, and to keep the flame throughout the body ever burning with the fresh warmth of life.

In accordance with these facts we find men all over the world acting instinctively. In a cold climate, either by necessity or choice, we exert ourselves, quicken the blood's speed, breathe rapidly, take in oxygen largely; in short, fan the flame which quick-returning hunger makes us feed. Even the least civilized follow correctly the natural law; the fruit so largely eaten by the native inhabitants of the tropics contains in every 100 ounces not more than 12 of direct heat-producing elements, while the blubber and oil of the Esquimaux have in every 100 ounces some 80 ounces of such elements. Nor is it possible without injurious effects to live in opposition to this instinct which science has shown to be in strict accordance with the intention of nature.

So far therefore we have evidence that good may come of method in cookery. \* Plum-pud-

ding is no dish for the dog-days, but its suet blunts the keen tooth of winter. Nor is it a mere sentimental sympathy that makes the wish to give the poor a good Christmas dinner. Scant fare makes cold more bitter. Those who, poorly clad, must face the wintry wind unfed, shiver doubly in the blast. The internal fire sinks for want of fuel, and the external air drinks up the little warmth the slow consuming system gives.

Milk, when a little rennet is poured into it, becomes curd and whey. The curd, chemists call animal *casein*.

When the water in which the meal of peas, beans, or lentiles has been steeped for some time, is warmed, and a little acid is poured into it, it always gives a curd called *vegetable casein*, which is precisely the same as the curd of milk, and contains like it, all the ingredients of the blood.

There is, then, no difficulty in understanding how one may live on peas, beans, &c., just as on milk or meat.

When the white of egg is poured into boiling water, it becomes firm; the substance so formed is called animal albumen, and is identical with the albumen of the blood.

When vegetables are pounded in mortar, the fresh juice expressed, lets fall a sediment which grass gives out largely, and which is also to be had from all kinds of grain. This deposit is the same as the fibrin or lean of flesh. When the remaining clear piece is boiled, a thick jelly-like substance is formed. Cauliflower, broccoli, cabbage, and asparagus are especially rich in this coagulating substance, which is the same thing as white of egg—animal albumen. It is called, therefore, vegetable albumen, and is, in common with the white of egg, identical with the albumen of blood, which with the fibrin, whether animal or vegetable, is the source of every portion of the human body.

We see, therefore, that the cattle have in peas and beans as casein, in corn and grass as fibrin, in sundry vegetables as albumen, the very materials of their flesh; and that, whether we live upon grain or pulse, beef or mutton, milk or eggs, we are in fact eating flesh; in meat, diet ready-made; in the case of the others, diet containing the fit ingredients of preparation. Nor are we left in the least shadow of doubt that albumen, of whatever kind, is sufficient to produce flesh, for not only do we find every ingredient of flesh contained in it, but we can turn the flesh back to albumen.†

But besides the flesh-making ingredients, viz: the albumen and fibrin, we have shown that it is

gives, in its farinaceous food, infusion of malt and uses milk and sugar, the respiratory matter prepared by nature herself for the respiratory process, in preference to cane sugar; and she allows him the unlimited use of salt."

† "Among all the arts known to man," says Liebig, "there is none which enjoys a juster appreciation, and the products of which are more universally admired, than that which is concerned in the preparation of our food."

\* "The intelligent and experienced mother or nurse chooses for the child," says Liebig, "with attention to the laws of nature; she gives him chiefly milk and farinaceous food, always adding fruits to the latter; she prefers the flesh of adult animals, which are rich in bone earth, to that of young animals, and always accompanies it with garden vegetables; she gives the child especially bones to gnaw, and excludes from its diet veal, fish, and potatoes; to the excitable child of weak digestive powers, she

needful the blood should have food for oxygen; this also is contained in milk, grain, pulse, vegetables and meat. In the meat as fat, which more or less the juices of the meat and even the lean contain, in the pulse, grain, potatoes, as starch, in the vegetables as sugar of various kinds, and in milk, as sugar of milk.

(To be Continued.)

### INTERESTING TO CANADIAN WHEAT-GROWERS.

*From the North American.*

We observe several signs of an upward tendency in the price of Breadstuffs in England. Perhaps this rise in price may not be felt to any great extent this year, although the "badness of the weather" for some time back is regarded in England as very detrimental to the growing crop. But if, as seems probable, the English farmers will, now that all hope of "Protection" is given up, cease to grow wheat to any great extent, an increase of present prices may be confidently expected in future years. The grain harvest of last year was not an average, and the quality inferior. The *Mark Lane Express* asserts that wheat will be less cultivated than formerly. That journal thinks present prices will be maintained. The correspondent of a Hamilton paper, under date of London, 7th January, says:—

The continuous and heavy drain of gold has induced the Bank of England to raise the rate of discount from 2 per cent., at which it has stood since the 22nd of April, to 2½ per cent. This was resolved upon yesterday, the 6th. One of the principal causes of this raise is the scarcity of breadstuffs at home, and the badness of the weather. The advices from Odessa last week state that 150,000 quarters of wheat had been purchased for the English market, and for this gold has to be provided. Very considerable shipments of specie will have to be made to the continent, and the desertion of seamen from the ships which have arrived in Australia has prevented arrivals of gold from the colony, where immense quantities are lying in store ready for export. Prices of wheat have an upward tendency, and if, as we firmly believe, the English farmers will from year to year diminish its growth, prices will rule higher and higher at future periods.

**CHINESE JUNKS.**—A Chinese ship, or junk, is seldom the property of one individual. Sometimes 40, 50, or even 100 different merchants purchase a vessel and divide her into as many different compartments as there are partners, so that each knows his own particular part in the ship, which he is at liberty to fit up and secure as he pleases. The bulk heads by which these divisions are formed, consist of four stout planks so well kaulked as to be completely water-tight. A ship thus formed may strike on a rock, and yet sustain no serious injury; a leak springing in one division of the hold will not be attended with any damage to articles placed in another; and, from her firmness, she is qualified to resist a more than ordinary shock. A considerable loss of stowage is of course sustained, but the Chinese exports generally contain a considerable value in small bulk. It is only the very largest junks that have so many owners—but even in the smallest the number is very considerable.—*McCulloch's Dictionary.*

## Poetry.

### THE FADED HEATHER.

[It is recorded of the Highland emigrants to Canada that they wept because the heather would not grow in their newly adopted soil.]

There may be some too brave to weep  
O'er poverty, or care, or wrong,  
Within whose manly bosom sleep  
Emotions, gentle, warm, and strong,  
Which wait the waking of a tone,  
Unmarked, unthought of by the crowd,  
And seemingly to them alone  
A voice both eloquent and loud;  
And then the feeling, hid for years,  
Burst forth at length in burning tears.

He wept, that hardy mountaineer,  
When faded thus his loved heather-flower;  
Yet mid the ills of life no tear  
Had wet his cheek until that hour.  
You might have deemed the mountain  
Had sooner shrunk before the blast,  
Or that his native rock would be  
Rent by the winds which hurried past,  
Rather than he a tear should shed  
Because a wild-flower drooped its head.

It would not grow—the heather flower,  
Far from its native land exiled,  
Though breezes from the forest bower  
Greeted the lonely mountain child;  
It better loved the wild bleak wind  
Which grew upon the Highland hill,  
And for the rocky heath it plied,  
Though tended both with care and skill;  
An exile on a stranger strand,  
It languished for its native land.

Oh! if the heather had but grown  
And bloomed upon a foreign scene,  
Its owner had not felt alone,  
Though a sad exile he had been;  
But when he marked his early death,  
He thought that like his mountain flower,  
Withered beneath a foreign breath,  
He soon might meet his final hour,  
And die a stranger and alone,  
Unwept, unpitied, and unknown.

**AERIAL NAVIGATION.**—Mr. Rufus Potter announces that he "now believes that his Aëroport may be put in full operation in two or three weeks of mild, calm, pleasant weather." At this season of the year, so long a period of mild, calm and pleasant weather would be as wonderful as Mr. Potter's first voyage. The machine is one hundred feet long, to be propelled by steam engines and capable of carrying six persons, and traveling forty miles an hour.

**REPUTATION AFTER DEATH.**—It is very singular how the fact of a man's death seems to give people a truer idea of his character, whether for good or evil, than they have ever possessed while he was living and acting among them. Death is so genuine a fact that it excludes falsehoods, or betrays its emptiness; it is a touchstone that proves the gold and dishonors the baser metal. Could the departed whoever he may be, in a week after his decease return, he would almost invariably find himself at a higher or lower point than he had formerly occupied, on the scale of public appreciation.—*Hawthorne.*

**ANOTHER VICTIM OF THE RAPPING DELUSION.**—Martin Langdon of New York, committed suicide on Friday, while in a state of mental depression, caused by frequent attendance upon the "Spiritual Rapping Circles." The jury which examined the case, recommended that the Grand Jury take measures for the suppression of these circle meetings. Poor Langdon had lost a daughter, and was made to believe that he could become a "medium" and see his lost child. In the effort he lost his reason, and ended his life by cutting his throat.



**BEHAVIOUR IN COMPANY.**—On the subject of behaviour in company, Leigh Richmond gives the following excellent advice to his daughters:—"Be cheerful, but not gigglers. Be serious, but not dull. Be communicative, but not forward. Be kind, but not servile. Beware of silly, thoughtless speeches; although you may forget them, others will not. Remember that God's eye is in every place, and His ear in every company. Beware of levity and familiarity with young men; a modest reserve without affectation, is the only safe path. Court and encourage serious conversation with those who are truly serious and conversable; and go not into valuable company without endeavoring to improve by the intercourse permitted you. Nothing is more unbecoming, when one part of a company is engaged in profitable and interesting conversation, than that another party should be trifling, and talking comparative nonsense to each other."

**THE FIRST NECESSARY OF LIFE.**—Potatoes contain 76 per cent. by weight, and turnips no less than 90 per cent., of water, which explains, by the way, the small inclination of turnip fed cattle and sheep for drink. A beefsteak, strongly pressed between blotting paper, yields nearly four-fifths of its weight of water. Of the human frame, bones included, only about one-fourth is solid matter (chiefly carbon and nitrogen), the rest is water. If a man weighing 10 stone were squeezed flat under a hydraulic press,  $\frac{7}{8}$  of stones of water would run out, and only  $\frac{1}{8}$  of stones of dry residue would remain. A man is, therefore, chemically speaking, 45 lb. of carbon and nitrogen diffused in  $\frac{5}{2}$  pailfuls of water. Berzelius, indeed, in recording the fact, justly remarks that "the living organism is to be regarded as a mass diffused in water; and Dalton, by a series of experiments on his own person, found that of the food with which we repair this water built fabric, five-sixths are also water. Thus amply does science confirm the popular saying, that water is the 'first necessary of life.'"—*Quarterly Review*.

**THE WIFE'S UNIVERSAL RIVAL.**—It must ever be borne in mind that man's love, even in its happiest exercise, is not like woman's; for while she employs herself through every hour in fond y weaving one beloved image into all her thoughts, he gives to her comparatively few of his, and these perhaps neither the loliest nor the best. It is a wise beginning, then, for every married woman to make up her mind to be forgotten through the greater part of every day; to make up her mind to many rivals too, in her husband's attentions, though not in his love; and among these I would mention one, whose claim it would be folly to dispute, since no remonstrances or representations on her part will ever be able to render less attractive the charms of this competitor. I mean the newspaper, of whose absorbing interest some wives are weak enough to evince a sort of childish jealousy when they ought rather to congratulate themselves that their most formidable rival is one of paper.—*Mrs. Ellis's Wives of England*.

**A PICTURE OF THE TRUE GENTLEMAN.**—The true gentleman is one that is God's servant, the world's master, and his own man; *his virtue is his business*, his study his recreation, contentedness his rest, and happiness his reward: God is his father, the Church is his mother, the saints his brethren, all that need him his friends, and heaven his inheritance; religion is his mistress, piety and justice his ladies of honour, devotion is his chaplain, chastity his chamberlain, sobriety his butler, temperance his cook, hospitality his housekeeper, providence his steward, charity his treasure, piety his mistress of the house, and discretion the porter to let in and out as is most fit. Thus

is his whole family made up of virtues, and he the master of his family. He is necessitated to take the world in his way to heaven, but he walks through it as fast as he can, and all his business by the way is to make himself and others happy. Take him in two words, he is a man and a christian.—*Clement Ellis, a divine of the 17th Century*.

**NIAGARA FALLS AND LAKE ERIE.**—Professor Silliman, the eminent geologist, discredits the opinion advanced by some, that the gradual wearing away of the rocks of Niagara Falls, may possibly result in draining Lake Erie. In a recent lecture he remarked:—"They will not halt at their present station, but retreat slowly and surely about two miles further, where they will stop again for an unknown period, and probably forever, since at this place the hard limestone will form both base and top of the falls, and thus stop the rapid destruction of the rock. Some have thought that they would finally reach Lake Erie, and that then the Lake would be completely drained. Such an event is impossible. At the point already mentioned, the torrent will gradually wear away the surface of limestone, forming a rapid, and henceforth Niagara will be one of the lost wonders of the world."

**LIME WATER, FOR HENS—ACCIDENTAL DISCOVERY.** During the last season, Mr. Joseph Wilcox, of this town, having occasion to administer lime water to a sick horse, inadvertently left a pail of the preparation in his barn, which remained there for some months, serving as a favourite drink for his hens. He soon found that the laying of his hens was apparently increased to a considerable extent. Being convinced of the importance of the (to him) new discovery, he has during the present season, kept his hens constantly supplied with lime water, placed in troughs within their convenient access, and the result was an increase in eggs of nearly four-fold as compared with previous experience.

He is willing to share the benefits of the experiment with his neighbours if they choose to try it; and hence this publication. The newness of the discovery (though it may not be new to all) is claimed only as applicable to the mode of imparting the lime in this case. Its use in another form for the purpose having been previously understood by many.—*Wayne Sentinel*.

**MONSTER FOSSIL REMAINS.**—In the river bank, at Zanesville, Ohio, it appears that some gigantic fossil remains have been discovered; which are the third of the same species discovered within three years. The *Courier* says:—"The one found yesterday was in much the best condition, and may when completely exhumed show almost the entire bones and frame of the huge monster, much beyond, perhaps double, the size of the living Asiatic or African elephant. The molar teeth, four in number, all that the species possesses, were found in the jaws sound and unbroken, and two weigh fourteen pounds each. The tusks were not in as good condition, only one being sound enough to bear moving. This one, only 8 feet in length, measures at its base 26½ inches in circumference, and at the point 8 feet distant; where it is broken off 10½ inches in circumference, the whole length of which was probably 12 feet more. We learn that it was intended to postpone the exhumation of the other portion of the remains for a day or two, in anticipation of the arrival of our old townsman, John W. Foster, Esq., U. S. Geologist, from Lake Superior."

If a proud man makes me keep my distance, the comfort is, he keeps his at the same time.

Dr. Howe has examined almost the entire number of cases of idiocy known in Massachusetts, and the result is, in all but four instances, that the parents of these idiots were either intemperate, addicted to sensual vices, scrofulous, predisposed to insanity, or had intermarried with blood relations. Here, then, is a warning, that is food for reflection.

Three aged men, natives of Germany, now reside in this city, says the *Detroit Free Press*, in the closest bonds of friendship. So amicable are they in their relations, one never undertakes anything without consulting the others, and they live together as brothers, though no tie of relationship exists between them. While in their native land, and yet youthful, they formed a league of amity which has never been broken.

**HORACE GREELEY A FARMER.**—About 30 miles from New York city, on the line of the Harlem Railroad, Horace Greeley, of the *Tribune*, has a farm of thirty acres of bog, swamp and mountain rocks, on which his future home is now building. It is near Charque, in Westchester county. Here the city Editor will play the country farmer and having money to spend, will doubtless employ himself in making "the wilderness blossom as the rose," and reap profit in health and happiness, if in no other shape.—*The Plow*.

The Chinese do everything different from other people. We have a "jack" for pulling the boot from the foot; the Flowery Land people, on the contrary, have an instrument for pulling the man from the boot. Having first placed the brogan in the vice, they apply a yoke-shaped lever to your neck, and this is worked by a self-acting wheel that only stops its action when your boot or head comes off. Ingenious, isn't it?

A curious case of somnambulism is recorded in the *Chillicothe Gazette*. A daughter, of Mr. Kaine arose from her sleep, and in her night clothes walked four miles up the Sciota river, waded into the stream, and swam across a deep part, and was found by an "early riser" sitting on the bank of the river—asleep! Remarkable enough, as the girl was only thirteen years old, and couldn't swim when awake!

**WONDERFUL COAT.**—A clever tailor of Highworth has accomplished the feat of making four coats when in reality it is only one. He has manufactured a coat which when first put on is a very good blue; he gives it a turn and a shake, it is transmogrified into the sombre hue of mourning; he inflicts another turn and shake and he appears in the Quaker garb, a real Simon Pure; and by another turn and shake he comes out a native of the "land of cakes," in genuine Scotch plaid. Every change fits equally well without discovering to view the other colors.—*Wills Eng. Stan.*

**MORE COTTON FROM INDIA.**—Mr. Fleming, Secretary to the Manchester Commercial Association, received advices from the Secretary to the Hon. East India Company, on Saturday, that the Court of Directors had instructed Mr. Wm. Rathbone of Liverpool, to forward to him for sale in Manchester two consignments of cotton; one amounting to 500 bales, per Chanceller, and the other to more than 1000 bales, per Loch Lommond, shipped at Bombay. These are the largest consignments yet made of cotton grown under the experiments making in India to encourage its cultivation there, and they consist chiefly of Dharwar cotton raised from New Orleans seed, the growth of 1850-51. There are, however, amongst this cotton some few bales grown at Schwan and Hyderabad (Scinde), Candeish and Kurrachee.

## GOOD NIGHT.

BY SHELLEY.

Good night! ah no! the hour is ill  
Which severs those it should unite;  
Let us remain together still—  
Then it will be good night.

## TWILIGHT.

BY WM. SYDNEY THAYER.

As dimmer grows the sinking light of day,  
A thousand shapes, by nimble fancy brought,  
Float from mysterious regions far away  
Upon the rising tide of peaceful thought.  
All that gives glory to our childish years  
All that unto the past the heart can bind,  
Youth's fleet winged visions, thronging joys and fears,  
Glide through the ghostly labyrinths of the mind.  
Now Aspiration, near the breaking morn,  
Raises triumphant her rejoicing psalm;  
And Hope, long sailing over seas forlorn,  
Is kissed by gales that tell of endless calm.  
Now, from the opening skies upon the earth,  
Descends the bloom primeval; now appear  
The visions that do have immortal birth,  
The thoughts that make our human life more dear.

## WHITBY AGRICULTURAL SOCIETY.

The annual meeting of the Agricultural Association of this Township was held in the Town Hall, Brooklin, on the 26th inst. The Report of the Secretary, John Ritson, for the past year was read and adopted, which shows a balance in cash on hand to commence the operations of the New Year of.....£25 3 0

The receipts are balance on hand 1st	
January, 1852.....	15 18 0
Cash f. on Subscription.....	51 10 0
Entry Fees.....	0 10 0
Government Grant.....	30 10 6

£98 8 5

### Disbursements.

Paid Premiums at four Fairs.....	£60 15 0
Do do Ploughin. Match.....	4 0 0
Judges' Dinners.....	1 17 6
Incidental expenses.....	5 12 6
Cash on hand.....	29 3 5

£98 8 5

The propriety of organizing a County Society was discussed, and resulted in the following resolutions:  
Moved by J. H. Perry, seconded by John Shier, and

*Resolved*—That this meeting fully approve of the forming of a County Agricultural Society for Ontario.—Carried.

Moved by E. Birrel, seconded by John Clark, and

*Resolved*—That the President and Directors of each of the Township Agricultural Societies shall form a committee, and take such means as to them may appear the best, to procure members of their respective Township Societies to form a County Society, and to call a general meeting of them and all others likely to join the Society, for the purpose of appointing office bearers for the present year, and that such general meeting shall take place upon the second Wednesday in February, at the Free Church, in Whitby Village, at 12 o'clock, noon.—Carried.

The officers elected for the Whitby Branch for 1853 are: President, John Ritson; Vice-President, John Dow; Secretary, J. H. Perry; Treasurer, John Corbet. Directors.—A. Farewell, James Corbet, John Ratcliffe, John Shier, Joseph Pierson, James Mitchell, Benjamin Rodgers, Thomas Lumsden, and James Pile.

The first meeting of the Directors will be held in Whitby village on Wednesday, the 9th of February, at 9 o'clock, A. M.—Reporter.



USEFUL RECEIPTS.

We are indebted to a fair correspondent for the following Receipts, which have been taken from the most trustworthy sources, and some of them verified by the writer's experience. Many of our lady readers could doubtless furnish us with something that would be useful in the family from their daily domestic duties and experience. We respectfully solicit their co-operation in attempting to improve and enlarge this department of our Journal.—ED.

LIQUID GLUE.

Pour naphtha upon shell-lac until of a creamy consistency, and keep in a bottle, never allowing it to remain uncorked for any length of time. This glue will unite iron, wood, glass, &c.

A CHEAP BUT GOOD TOOTH-POWDER.

Cut a slice of bread, as thick as may be, into squares, and burn in the fire until it becomes charcoal; after which pound in a mortar, and sift through a fine muslin. It is then ready for use.

TO REMOVE INK STAINS FROM WOOD.

As much oxalic acid as will lay on a sixpence dissolved in a tablespoonful of hot water, lay some on the wood and rub hard with a cork until the stain disappears; then wash and re-polish. The above will remove the stain without injury to the wood—mahogany, or any other. It also cleans the brass work.

PARSNIP WINE.

Take fifteen pounds of sliced parsnips, and boil until quite soft in five gallons of water; squeeze the liquor well out of them, run it through a sieve, and add three pounds of coarse lump sugar to every gallon of liquor; boil the whole for three quarters of an hour; when it is nearly cold, add a little yeast on toast. Let it remain in a tub for ten days, stirring it from the bottom every day; then put it into a cask for a year. As it works over, fill it up every day.

FOR PICKLING EGGS.

If the following pickle were generally known, it would be more generally used. It is an excellent pickle to be eaten with cold meat, &c. The eggs should be boiled hard (say ten minutes), and divested of their shells; when quite cold put them in jars, and pour over them vinegar (sufficient to quite cover them), in which has been boiled the usual spices for pickling; tie the jars down tight, with bladder, and keep them until they begin to change colour.

FOR CHILBLAINS.

Take boiled rain water one ounce, lunar or silver caustic one scruple, dissolved. Then with a swan feather give the place a coating of the above; if it turns black in a few hours the chilblains are cured, if not, give another coating. Should the chilblains be broken, touch the parts round by the edges of the

holes. Use a clean feather every time. It is sure to cure, though they be broken.

FOR A COUGH.

Quarter of a pound of linseed; quarter of a pound of raisins; two ounces of stick liquorice; two quarts of soft water, to be boiled until reduced to half the quantity. When strained, add a quarter of pound of brown candy, pounded; one tablespoonful of good old rum, one tablespoonful of lemon juice or vinegar. A cupful to be taken on going to bed, and more frequently, if required. To be warmed. Used for years, and approved.

A VERY EXCELLENT AND CHEAP CAKE.

Two pounds and a half of flour, three quarters of a pound of sugar, three quarters of a pound of butter, half a pound of currants, or quarter of a pound of raisins, quarter of a pound of orange peel, two ounces of caraway seeds, half an ounce of ground cinnamon, or ginger, four teaspoonfuls of carbonate of soda, mixed well with rather better than a pint of new milk. The butter must be well melted previous to being mixed with the ingredients.

ECONOMICAL FAMILY PUDDING.

Bruise with a wooden spoon, through a colander, six large or twelve middle-sized boiled potatoes; beat four eggs, mix with a pint of good milk, stir in the potatoes, sugar and seasoning to taste; butter a dish; bake half an hour. This receipt is simple and economical, as it is made of what is wasted in most families, viz., cold potatoes, which may be kept two or three days, till a sufficient quantity is collected. It is a weekly dish at our table. A teaspoonful of Scotch ship marmalade makes a delicious seasoning.

WEATHER, MARKETS, &c.

The present winter, so far, has proved a great contrast to the last. Up to the beginning of the year, most field operations could be carried on in the western section of this Province, and the mean temperature ranged very high. January has been a seasonable month, moderate frosts with heavy falls of snow, so that the wheat plant has been sufficiently protected, and good sleighing afforded the farmers for hauling fire-wood and timber, and getting his produce to market. All kinds of produce continue to fetch remunerating prices, and a healthy trade seems to be opened for the future. Flour in Toronto market ranges from 21s a 23s 9d per barrel; Wheat 4s 3d a 4s 9d per bushel; Barley 2s 3d a 2s 6d; Oats 1s 8d a 1s 10d; Peas 2s 6d a 3s; Butter, Meat, Eggs, &c., continue to maintain comparatively high rates.

From England we hear that a succession of heavy rains during the last three months of the year had produced destructive floods, and had consequently retarded wheat-sowing; in some localities, indeed, very little wheat had been deposited up to Christmas, and what had been sown on wet ground was greatly injured or perished. This evil had been more or less experienced both in Scotland and Ireland, and must tell heavily on the crops of next harvest. The potato rot was extensively prevalent.

## EDITOR'S NOTICES.

HON. ADAM FERGUSON ON DURHAM STOCK—Too late for the present number; it shall appear in our next.

AGRICULTURAL JOURNAL, AND TRANSACTIONS OF THE LOWER CANADA AGRICULTURAL SOCIETY. Montreal.

The January number, forming the commencement of the 6th vol. of this useful periodical, is before us, and we offer our hearty congratulations to its persevering Editor, Wm. Evans, Esq., and the Directors of the Lower Canada Agricultural Society, under whose auspices it is published, on the success which has evidently attended their labours. The present number of the Journal bears marks of a healthy progress; and when the Board of Agriculture for Lower Canada shall have been organized, in accordance with the provisions of the new Agricultural Statute, and shall have got fairly into operation, we shall confidently look to the pages of our respected contemporary (presuming it will be made the organ of the Board, as it is now of the Society) for much valuable and interesting information. We never turn over the pages of this Journal without discovering a large amount of plain, sound, *practical* information, which constitutes by far the most useful characteristic of an Agricultural periodical. From the Editor's long experience in practical farming in the Lower Province, we confidently look to the increasing usefulness of the paper which is entrusted to his hands; and most sincerely do we hope that the only kind of rivalry between the two Boards and Journals of this noble Province may be that which consists in doing, the largest amount of good in its respective section *and to the country at large.*

THE CANADIAN JOURNAL; A REPERTORY OF INDUSTRY, SCIENCE, AND ART. Toronto: Hugh Scobie. 1853.

This valuable serial fully sustains, as it proceeds, the high estimate of merit which we expressed at its commencement. It is conducted with much ability and judgment; and as being the organ, and, therefore, containing the proceedings of THE CANADIAN INSTITUTE, a young and already vigorous Society, it can hardly fail, we should hope, to command the confidence, as it most richly deserves the support, of the thinking and improving portion of the public. The January number is enriched by much valuable original matter, and the extracted articles evince a sound, discriminating judgment. We regret that we cannot make room, as we intended, for the eloquent and instructive annual address of Captain Lefroy, the President of the Institute, contained in the present number. Many of our readers will regret to learn that the country will shortly be deprived of the valuable scientific services of CAPTAIN LEFROY, the able and accomplished Superintendent of Her Majesty's Magnetic Observatory, near this city; but we earnestly

hope that means will be devised of continuing unbroken the interesting and important series of observations which have been for many years so accurately and systematically made in that Institution. Both the Canadian Institute and the University, we are glad to learn, are moving with a view to secure this object through the intervention of the Provincial Government. It would be alike a misfortune and a reproach to suffer the Magnetic Observatory to become extinct, and we should be glad to see the field of investigation enlarged,—embracing astronomy, &c. Our *agricultural* readers even, are much more deeply interested in several of the inquiries and observations made in such an Institution than would at first sight appear; and we hope the time is not far distant when Canada will take a respectable position among civilized nations in carrying forward the higher branches of science and art. With this view we earnestly entreat all well wishers of their country's enduring welfare and progressive advancement to extend a prompt and liberal support to all such organisations as THE CANADIAN INSTITUTE, and its Journal of Transactions. The price of the Journal, published monthly, is fifteen shillings per annum. Country members' subscription is only one pound per annum, *including* a copy of the Journal.

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Crosby Corners, P. O.,  
Markham, Canada West,  
December 23rd, 1852.

tf.

## The Canadian Agriculturist,

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N. B.—No advertisements inserted except those having an especial reference to agriculture. Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon personal or written application.



THE  
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AND  
Transactions  
OF THE  
BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. V.

TORONTO, MARCH, 1853.

NO. 3.

GUELPH FARMERS' CLUB.

*Address of John Harland, Esq., delivered at the first meeting, held at the British Hotel February 11th.*

Agriculture, the most certain source of health, strength, wealth and independence, is the art of making the earth produce in large quantities, and in the greatest perfection of which nature is capable those vegetables which are necessary to the subsistence, or useful for the accommodation of mankind. The difference between an Agriculturist and a Gardener consists in the one being chiefly engaged in rearing small quantities of the nicer and more delicate vegetables which are rather valued as objects of luxury than as articles of food, whilst the other labors upon a much more extended scale with a view to supply not only himself and his countrymen, but the whole world with the necessaries of life. Agriculturists, or the persons engaged in Agriculture are usually denominated *Farmers*. To enable the farmer to conduct his business with success, it is necessary that he should not confine his attention to the mere cultivation of the soil, or the rearing of vegetables. The vegetables which are capable of affording a comfortable subsistence to the human race, are few in number; and it has been found by experience, that they cannot be profitably sown and reproduced year after year on the same spot of ground; consequently, it becomes necessary at times to raise grasses and other vegetables which are unfit in their original state for the nourishment of mankind. But although men cannot live upon grass, they may nevertheless contrive to obtain subsistence from it in an indirect manner. They may give it to cattle, whose natural food it is, and by thus transmitting grass into flesh, they may obtain a much richer and more stimulating food than any vegetable production can possibly afford. It is therefore a part of the business of the farmer to rear and feed those animals which are universally used as food, in order that he may be enabled to derive the greatest profit from the portion of ground it is his lot to cultivate. It is also necessary towards conducting his operations with success, that he should rear and feed other animals, not as a source of human subsistence, but for the sake of the services which they are capable of rendering him. To the cultivators of the soil these animals,

from their strength and patience of labor, are not only useful, but are absolutely indispensable. They must therefore be fed and lodged with the greatest care. Hence the employment of the farmer requires much foresight, and a considerable knowledge of the relations that subsist between the most important objects in nature—the soil, the seasons, the animals, and the plants, so far as they are connected with the subsistence of mankind. It is by bringing to perfection this art, that man becomes indisputably the lord of this lower world. He subdues by his operations every part of the surface of the earth, and acquires over the animals which inhabit it a solid right of dominion or of property, in consequence of having reared and afforded them subsistence by his skill and labor. He uses them indeed as food; but before he can do so, he must first bestow upon them subsistence, attend to their multiplication, and welfare. As they possess no foresight, the purpose to which they are destined is to them no evil. It is a fortunate circumstance that the art of the agriculturist, which is the foundation of all others, and at all times indispensable to human existence, is in every respect conducive to the welfare of those engaged in it. The practice of it not only bestows health on the body, but by the variety of occupations which it affords, it also awakens a considerable degree of reflection in the minds of persons in the lowest ranks of the profession, while at the same time it prevents their acquiring that spirit of artifice and cunning, which in all countries is so apt to degrade the character of those engaged in the inferior branches of commercial employment. Nor does it fail, in all ranks and conditions of life, to produce a more candid and liberal character than any other employment. No farmer refuses, or even hesitates to communicate to the public every branch of this art, and every improvement he and his forefathers have made in it; whereas, in all the branches of manufacture and commerce, every transaction is covered with a mysterious veil of secrecy, and every improvement is as far as possible, concealed by its inventor from the public, and sometimes, undoubtedly perishes with him. In an art so necessary to mankind, and that has been so universally practised, it might perhaps be expected that the principles upon which its operations depend would have been by this time

completely and accurately investigated, and consequently that a correct theory of agriculture could be easily exhibited. This, however, is by no means the case; and it is not a little singular that in this useful of all arts, the theory should be more defective than in almost any science with which we are acquainted. It is fortunate, however, for the human race, that in most cases, or at least in all important arts, they succeed better in practice than in speculation; and it has often happened in agriculture, that a man has cultivated the ground judiciously, while at the same time he has speculated erroneously concerning the mode of doing so. Various reasons render it more difficult to form a complete theory of agriculture, than of chemistry, mechanics, or other arts. In agriculture, experiments cannot be made in an instant, in an hour, or even a day or two. A whole season must pass away before a single experiment can be performed, and after all, as in other arts, the inquirer after truth may be misled by some unobserved circumstance.—Something quite foreign to the experiment itself arising out of the peculiar state of the soil, or of the train of seasons, may produce plentiful crops for a year or two, though in ordinary circumstances no such effect would follow, and the ingenious contriver of the experiment, who thought he had made an important discovery, may afterwards derive from it only disappointment, mortification and pecuniary loss. Human life is too short to admit of a very great variety of agricultural experiments to be performed by the same individual. After a few seasons he must leave his place to be occupied by a new inquirer, possessed probably of a different character, and of different views; and unfortunately it is not usual for farmers to publish, and thus to immortalize and to diffuse over whole nations the result of their private experience and reflections. Scattered over the face of great countries, and having little intercourse with foreigners, or even with each other, they know little of what is done by men engaged in the same profession, though at no great distance from them. In this way the benefit of local discoveries are not communicated to the world at large, nor is an opportunity afforded of eradicating local prejudices and erroneous practices. Perhaps no country on the face of the globe can exhibit a rural population possessing more general intelligence, and a more enterprising spirit, than the farmers of Upper Canada; but at the same time it must be admitted that a great proportion, even of them, are lamentably ignorant of both the theory and the correct practice of the noble art which they profess, and by which they are making such laudable and strenuous exertions to render themselves and their families rich, independent and powerful. In order to remedy this state of ignorance in this country, an Agricultural Society was formed, which was intended to be a lantern to the benighted; it is now in the thirteenth year of its existence, and I hesitate not to say that the most skeptical must admit that it has been productive of much and extensively diffused benefit. It has, however, been example without precept; it has exhibited what *has* been done what *can* be done, but it has not in all cases

pointed out *how* it has been done. The Directors have, from time to time, with the most unremitting and praise-worthy zeal, endeavored to make the Agricultural Society more generally useful. Among other plans, they made it a condition that any one obtaining a premium for any animal or article, should previous to the amount being paid him, publicly give an account of the means which had been used to produce such animal or article. But this plan was soon found to be impracticable—for to carry it into effect, would have required that the proceedings supplementary to the show should have been continued for a day or two, or probably three days; this was of course entirely out of the question. It has been ultimately resolved to establish a Farmers' Club, a sort of supplement to the Agricultural Society, the objects of which shall be "to take into consideration, and to afford opportunities for giving and receiving information on all matters connected with agriculture." It has unfortunately devolved upon me to attempt to set forth the advantages which may be derived from such an association. I say unfortunately, not because I am in the slightest degree averse to devoting my poor talents to any object which the Agricultural Society may deem useful, but because I am really afraid of my utter incompetency to place the Club in such a position before our agricultural community as its importance imperatively demands. One of the first and most obvious obstacles to the improvement of agriculture or any other art, consists in the ignorance of its practitioners, or in its being carried on by persons of an illiterate and unintelligent character, who are unable to take a comprehensive view of the principles of their profession, or who have not sufficient curiosity to enquire after the best modes of practice, or understanding to discern the value of any new practices that are explained to them. It ought never to be forgotten that the art of the farmer is an intricate and extensive one, and that one of the chief circumstances which has hitherto retarded its improvement has arisen, as already mentioned, from the secluded situations of the persons engaged in it. They are scattered over the face of the country instead of being congregated together, like other *artists* in towns, so as to be enabled to derive aid from each other's experience. The Farmers' Club will, I firmly believe, have a tendency to remove these obstacles, as it will doubtless elicit and promote an excellent social spirit, will be the means of making farmers know and respect each other, and will afford favorable opportunities of agreeably spending a leisure hour in a rational and useful manner. It will I doubt not assist materially in doing away with the *excessive use of ardent spirits*—for persons attending its meetings will be required to conduct themselves in a sober, discreet, and respectful manner. It will teach farmers to think and act more accurately and systematically and observe more closely and correctly, in order to speak or write fluently on any given subject. Its influence on young farmers will be most important and beneficial. I must again repeat, that farmers in all ages and countries have laboured under the incalculable disadvantage of isolation, arising out of these



necessarily diffusive location; they are consequently less ready than the clergy, the lawyers, or the commercial classes, at argument, or the power of communicating ideas; hence it happens that all offices of *power, honour, or emolument*, in this Province, are given to *lawyers, doctors, merchants*; and such offices will very properly continue to be given to and held by the members of these professions, until farmers endeavour to shake off the lethargy by which they have so long been afflicted, and use means to qualify themselves for that position in society to which their large preponderance in number, and rapidly increasing wealth, undoubtedly entitle them. My decided opinion is, that the establishment of and due attendance at the meetings of, a Farmers' Club, is taking the first proper step to attain that respectability of position which I have attempted to indicate. From the discussions of the Club, the inexperienced will have an opportunity of rapidly learning the results of the practice of the more experienced, and so conducting their labours on the most approved and successful systems. Having given subjects for discussion at stated periods, will not only induce the members to think and prepare themselves, but will also tend to elevate their views and feelings as regards farming as a pursuit, and will consequently make them respect themselves and every member of their own class. It will make them better farmers, better sons, better husbands, better fathers, better neighbours, and, above all, better Christians. Such are, in my estimation, some of the principal benefits which will be derived from the establishment of a Farmers' Club. I refrain from entering upon the subject of what are the proper questions to be discussed at the monthly meetings, as I believe there are other gentlemen present who are prepared to address you on the subject, who have a much greater claim upon your attention than I can pretend to. I have merely to apologize for this hastily composed address, and to thank you for the patient indulgence with which you have listened to it.

## The Agriculturist.

TORONTO, MARCH, 1853.

BOARD OF AGRICULTURE.

We have received several enquiries and suggestions from individuals residing in different parts of the Province, who feel an interest in promoting the cause of Agriculture, relative to the means which are, or should be used, for that purpose. The Board will meet in this city as soon as the navigation opens, when business of much importance will come up for consideration. Any communications with which we may be favored touching matters coming within the province of that body, will receive proper attention, and we hereby invite enquiry, and re-

quest suggestions, with a view to prepare and adopt such measures as may best secure as many of the important objects in view, as possible.

We would particularly call the attention of the reader to the communications which recently appeared in this journal, from the pen of the President of the Agricultural Association, on certain alterations and improvements in the management of the annual exhibitions. As the amount of visitors and articles offered in competition may be expected annually to increase, every effort should be made to appoint a sufficient number of the most competent and disinterested judges that it is possible to obtain, and so to modify and extend the arrangements and regulations as to give the greatest degree of confidence and satisfaction to all parties, that may be practicable. Some irregularity and inconvenience, and we may add, dissatisfaction, have arisen more or less, at every exhibition, from the rules not having been strictly enforced, as to the time of closing entries, and the judges making up their books. Unfortunately the weather,—such as a storm on the lakes, or heavy rains,—has in most previous years disturbed the arrangements; a cause which will not be so severely felt when the railways that are now commenced get into full operation. Several individuals have written us on the urgent necessity of insisting on full and unbroken pedigrees in the classes of pure bred stock, and this regulation is of so much importance, that it will have to be strictly enforced.

With respect to the Experimental Farm and the importation of Stock, and other matters connected therewith, or arising therefrom, the Board will have to consider and probably decide on, at its next meeting. The grounds in the University Park are already partially prepared, and about 16 acres were sown to wheat last fall; and it is expected that active operations will commence in the spring. An order has already been sent to England for new and improved varieties of seeds, roots, &c., for illustrative and experimental purposes.

We hope shortly to be able to lay before our readers some interesting and satisfactory information on these topics, both as connected with the Bureau and Board of Agriculture. In the

meantime, we shall be happy to receive any suggestions for the more effectually carrying out the objects before mentioned.

#### FARMERS' CLUBS.

It is with much pleasure that we find these useful institutions increasing in the country, although the present rate of progress be somewhat slow. The township of *Hamilton Farmers' Club* has been in operation but a very few years, but our readers are fully aware of the excellent essays on several important subjects of Canadian agriculture, which have been read before that Society, and published in the pages of this journal. The *County of Oxford Farmers' Club* has been very recently established, yet, from what we have read and published of its proceedings, we think it bids fair to have a wide-spread, vigorous, and enduring influence. Among these hopeful signs of the times—signs the significance of which cannot be mistaken—we notice with much satisfaction the formation of a Farmers' Club among the intelligent and enterprising agriculturists of the County of Wellington; the introductory Address delivered at its first meeting, by a gentleman of extensive agricultural experience, the reader will find on another page. Mr. HARLAND's paper is richly deserving an attentive perusal by all who are desirous of advancing the agricultural interests of this young country, inasmuch as it is plain, practical, and eminently suggestive; the evident production of a man who understands the condition and wants of farmers, and the available means of elevating their social status, and of advancing their indispensable art. We trust that the perusal of this Essay will rouse the attention of the more enterprising portion of the farmers, in all sections of the Province, to the important objects which it so ably and lucidly sets forth.

We very much like the idea of making Farmers' Clubs necessary *adjuncts* to Agricultural Societies, and strongly recommend the following sentence to the reader's attention: "It has ultimately been resolved to establish a Farmers' Club, a sort of supplement to the Agricultural Society, the objects of which shall be to take

into consideration, and to afford opportunities for *giving* and *receiving* information on all matters connected with agriculture." Truly does the writer previously observe that, in agricultural exhibitions, the principles and advantages of improved husbandry and cattle breeding are seen in their *results*, but *how* these results have been obtained—*how they may be worked out by others*—a knowledge which contains the germ of general improvement—there is seldom time or means enough at such exhibitions to explain. The idea, therefore, of creating a Farmers' Club as a supplementary appendage to an Agricultural Society, seems absolutely necessary to the completeness of the work. And in pressing this view of the subject on the attention of the managers of Agricultural Societies generally, we would not only suggest, but earnestly urge, the desirableness of giving the greatest degree of publicity to the proceedings of such organizations, both by the local press and the agricultural journal or journals, published in the country. It is hardly necessary to say that our own pages shall always be open, as far as practicable, to such proceedings.

#### PATENTS OF INVENTION.

BUREAU OF AGRICULTURE,  
Quebec, 18th February, 1853.

His Excellency the Governor General has been pleased to grant Letters Patent of Invention, for a period of Fourteen Years, from the date thereof to the following persons, namely:

George Stacy, of Montreal, for an "Improved Spike Machine"—(dated 20th January, 1853);

William Allechin, of the Village of Paris, for an "Improved Scythe Holder"—(dated 26th January, 1853);

George Ansley, of the Village of Vienna, for "The Centrifugal and Centripetal Churn"—(dated 8th February, 1852);

Ezekiel Burley, of the Township of Clarke, for an "Improvement on the Wooden Plough"—(dated 14th February, 1853.)

We are glad to perceive from the above that mechanical genius is not wholly asleep in the Province; and now that the office for patents is incorporated with the Bureau of Agriculture, a measure both wise and expedient, it is much to be hoped that the Minister presiding over that important Department, will give his best attention (as we have no doubt he will) to such an improvement of the regulations, as will foster in-



ventive genius, and arrange and preserve its productions, for the gratification and development of the public taste. Inventions no doubt will rapidly increase in Canada, if such as are really useful receive the fostering care of the Government and the patronage of the public, to which their respective merits may entitle them.

—EDITOR.

#### HON. ADAM FERGUSSON UPON IMPROVED DURHAM CATTLE.

*Editor of the Agriculturist :*

DEAR SIR,—If you consider the following memorandum of my Stock, likely to be either interesting or useful, I place it at your disposal, to assign it, if approved, a place in your journal.

I came, as a settler, to Canada in 1833, and soon perceiving that improvement was imperiously required in the department of Live Stock, I called on the aid of experienced friends at home, to select for me a few animals for a trial.

I had long before made up my own mind upon the superior excellence of improved Short-horns, when selected with judgment and care, and without any unwise parsimony as to giving a liberal price, without which, I was perfectly aware, that no *first class* Stock could be had, and with ordinary *second rate* herds, I resolved to have nothing to do.

The stock from which a Bull and two Heifers were selected for me, was that of Mr. Chrisp, of Doddington, in the County of Northumberland, a gentleman whose practical skill, long experience, and unwearied efforts had established a high reputation even in that district, where so many distinguished breeders were to be found. My cattle came out in 1834, under the charge of an old farm servant of my own.

They consisted of Sir Walter, Beauty, and Cherry, to which I added at Albany two Heifers from the thorough-bred herd of Stephen Van Ransalaer, the Patroon.

At that period it was by no means so easy a matter as it is now to bring Stock in safety across the Atlantic. My cattle were rather unfortunate in their voyage. They were over 40 days at sea, and their fodder became exhausted. A party showed them great kindness, giving them straw from their beds, notwithstanding which, for the two last days, they had only a handful of oatmeal, and filled up the vacuum with fresh shavings from the carpenter's bench. In due time they reached me in safety, though in poor enough plight.

Sir Walter was an animal of great substance and good form; the English Heifers were excellent samples of their breed, and all bore regular pedigrees in connection with the English Herd Book. Mr. Chrisp's animals were all of a

strawberry roan colour—the Albany Heifers were red and white. These latter were fine animals, but decidedly inferior to the English stock, and they proved so lamentably defective in milking qualities, that I was well pleased, ere long, to get rid of their blood.

Beauty brought me the first calf in August, 1835. She had a white Bull calf, and at calving time gave us the slip, and two days elapsed ere we found her calf, carefully covered up in the bush. It seemed remarkable that an animal should follow so independent a course, seeing that she had never been accustomed to run at large, or to dispense with the constant care and attention of man. She thrived well, and all my Short-horns seemed to agree well with Canada, requiring no particular feeding or care.

About the year 1837 a somewhat singular epidemic prevailed among cattle in the Gore district, and many farmers lost the greater part of their stock. The animal continued to take its food, but the feet became affected to such a degree as to rot off, and the animal soon perished. I became uneasy, and determined to have a sale. Seven animals were sold, and fetched £179. Among them was Sir Walter, and it is not unreasonable to term the prices moderate, when I ascertained that this Bull, knocked off at £32, was sold a few months after in Rochester for £150.

The next transaction I had was with Mr. Clelland, a breeder from Kentucky, who evinced his satisfaction with my herd by giving me £50 for Champion, a bull then 23 months old, and £75 for Cherry, one of my imported cows.

In 1839 Beauty had twin Bull calves by Champion. I named them Romulus and Remus. The first was sent to my son at Fergus; Remus was sold for £50 to Messrs. Davis, in Nelson, and ultimately was sold into New York State. About this time my stock received an infusion of good blood from the stock of Col. Burrowes, of Brantford. The Colonel sent two favorite Cows (Beatrice and Annette) to be served by my bull Mayduke, and their sojourn with me being somewhat prolonged, he very handsomely insisted upon my accepting Annette's calf, then at her feet, as grass mail. This calf was got by Triumph, and proved an acquisition. I named him Strathmore, and after using him for some seasons, disposed of him to the Goderich Agricultural Association. I may here mention that Mayduke, above referred to, was purchased by Lewis F. Allen, Esq., of Black Rock, N. Y., and while in his possession carried the first premium of his class at the New York State Show, held that year in Rochester.

In 1849 Mr. Howitt, of Guelph, purchased from me Ruby, a superior young Cow, and has been well satisfied with her progeny. Mr.

Howitt is well known as a breeder of Short-horns. He is thoroughly skilled in stock, and always willing to pay an adequate price for an article that meets his views. His own herd is a very high bred one. It was originally brought from England by Rowland Wingfield, Esq. Mr. H. considered his stock as showing a tendency to become rather fine, and sought to restore substance by introducing some fresh blood.

I have been pretty regular in keeping a note of the gestation of my Cows, and find it to range from 274 to 290 days. I have only had one case of obstinate barrenness. A white heifer, Blossom, got by Strathmore out of Beauty, was decidedly sterile. She showed from an early age an uncommon tendency to take on flesh, and at the age of six I sold her for beef to Mr. Armstrong, butcher in Toronto. Mr. A. kept her for two or three months on extra feed, and of date January 11, 1849, he wrote me :

"SIR,—I received yours dated January 6th, and with much pleasure comply with your request.

"My opinion is decidedly in favour of the Durham breed for Canada. I think them better suited than any for this country.

"The weight of Blossom on the market scale was 1992 lbs; dead weight, that is to say, beef, hide and tallow, 1559 lbs. This you may rely on, as correct. As regards the quality of the beef, my customers were unanimous in pronouncing it the best they had ever eaten.

"As a proof of my admiration, I had her likeness taken, a copy of which I intend to forward you as early as I can.

Yours, &c.,

PHILIP ARMSTRONG.

To the Hon. Adam Fergusson, Woodhill.

In a new country, the improvement of live stock must necessarily be slow. Capital is scarce, and our agricultural population not very generally enlightened. There is no doubt, however, that progress is making, and that a considerable excitement has taken place. The Provincial Legislature has been liberal and has ever shown itself ready to promote Agriculture. Some politicians consider it as having gone too far, especially in our last Agricultural Act, wherein a Bureau of Agriculture is appointed and placed under a specified member of the Cabinet. I shall not enlarge upon the expediency of such an arrangement, but will certainly not withhold my unqualified approbation of the measure. I consider it likely, if judiciously administered, to prove a most beneficial link in the connection which should exist in such a country as this, between the yeomen of the Province and the ministry of the day; and I consider it no very hazardous prediction to pronounce it an arrangement from which essential good may be expected to result.

It is a most interesting question, by what

means shall we best attain an improvement in the live stock of Canada.

As regards our cattle, without desiring to discourage importation by Local Associations, I incline to think that in no way will benefit, so quickly and certainly ensue, as from the dispersion of really good Bulls throughout the Province, leaving farmers to select superior cows from the native stock. A very few years will exhibit good fruits from a steady perseverance in such a course. It is a fair subject of discussion, what Bulls will be most likely to effect this end. While one man admires the *Ayrshire*, another exalts the *Devon* or the *Durham*, and with others the *Hereford* claims the first place. I have named them *alphabetically* to prevent giving offence. Time will decide the truth, and

"*Palmam qui meruit, ferat.*"

Meanwhile, I would earnestly deprecate an unseemly bickering and squabbling. One principle should however be *rigidly enforced*. Let no grade bull, no male animal of mixed or cross blood, upon any account be made use of. No breeder who understands his business, will ever place any reliance upon an animal as sire to his stock, unless that animal is *perfectly pure* in his blood, be it *Hereford*, *Durham*, or any other: and from an *improved Durham* Bull, a distinct pedigree should be required, in *unbroken connection* with either the English or American Herd Books.

From my own herd, the following bulls have gone out, and it is satisfactory to be informed, as I am from time to time, that their introduction has been of decided advantage to the stock of the District.

#### LIST OF BULLS SOLD BY THE HON. ADAM FERGUSSON.

##### SOLD TO SERVE IN CANADA.

1. Romulus, white, sold to Sir Allan N. McNab.
2. Washington, roan.....Mr. Watson, Woodstock.
3. Brilliant, roan.....Mr. Christie, Dumfries.
4. Remus, roan.....Mr. Davies, Nelson.
5. Strathmore, roan.....Goderich Ag. Society.
6. A Bull Calf, white.....A. Ferris, Doon Mills.
7. " " red & white. T. Smith, Flamb'ro West
8. Althorp, roan.....E. & W. Gwillimby A.S.
9. Wheatear.....Woodstock Ag. Society.
10. Favourite.....Do. Do.
11. Earl Durham.....Adelaide Ag. Society.
12. Bull Calf, red.....Angus Cameron, Esq., Kingston.
13. Bruce, red & white.....Owen Sound Ag. Asso.
14. " Bull Calves.....Mr. Fergusson, Kingston,
15. " with their Dams.
16. St. George, white.....Hiram Smith, Nelson.

##### SOLD INTO THE STATES.

1. Sir Walter, roan, sold to Mr. Ewart, and by him to the States.
2. Champion, roan.....Mr. Cleland, Kentucky
3. May Duke, roan.....Mr. L.F. Allen, Blackley
4. Halton, red roan, bred by Mr. Vail, Troy, and sold in 1851, to S. P. Chapman, N. York State.



My earliest acquaintance with *improved Durhams* is now a matter of pretty old date. In 1813, when resident in Northumberland, I made the acquaintance of the late Thomas Bates, Esq., who at the time farmed the estate of Halton Castle, and was beginning to lay the foundation of his fame as a breeder. I received from Mr. B. much kindness and instruction, and was fully initiated in all professional secrets. Ultimately Mr. Bates purchased the estate of Kirkleavington in Yorkshire, which he farmed until his death, two or three years ago. Here he brought to perfection his herd of Short-Horns, known as the *Duchess tribe*, and which (all points considered) is generally admitted to stand unrivalled in England.

About a dozen years ago I was invited to act as a Judge at the Great State Fair of New York, and have been a pretty regular guest on such annual occasions ever since. Many kind and valued friends and acquaintances, have I made upon these occasions, and deeply impressed do I feel with the unmerited hospitality and attention which I have uniformly experienced.

George Vail, of Troy, has been for many years an importer of Mr. Bates's stock. Our mutual intimacy with Mr. Bates led us to contract an acquaintance, which soon ripened into friendship, on my part, as I became more and more aware of his probity and worth. Mr. Vail has been a very successful breeder of Durham cattle, and in fact, his name is a household word with enterprising breeders in every State of the Union. I cannot here refrain from mentioning a little trait of Mr. Vail, simply illustrative of his liberal and honorable character. Some time ago, Mr. Vail had imported from Mr. Bates's herd, among other animals, a very superior heifer named *Yarm Lass*, in calf by a highly prized Bull of Mr. B.'s stock. It was arranged between Mr. Vail and me that should *Yarm Lass* produce a Bull calf, he was to become mine. In due time it was intimated that she had dropped a very fine bull calf, color and all, as I had wished. I lost no time in acknowledging the welcome notice at the same time giving the name which I wished him to bear, and making arrangements as to time of removal &c. Here matters rested for a short time, when I was one day stunned by receipt of a letter, conveying the tidings of the calf having been cut off by an obstinate diarrhoea, which resisted all the remedies employed. I looked upon the loss as my own, beyond doubt, as the bargain had undoubtedly been completed. Mr. Vail, however, did not intend that it should be so. He added, after lamenting the occurrence, "I have, however, several young Bulls of pretty much the same blood, come and see them, and then I think you will be able to se-

lect one which will please." It may be supposed that I lost no time in availing myself of such an invitation, and obtained from him *Victon*, now in my hands, *the only bull* born in America, whose *own* pedigree will be found in the English Herd Book.

A few years ago my lamented friend and neighbour, John Wetenhall Esq., and I purchased a bull calf from Mr. Vail. We called him *Halton*. He was got by *Meteor* out of *Lady Barrington*. On Mr. Wetenhall's death *Halton* became my sole property. I used him for two years and then sold him to S. P. Chapman, Esq., of Clockville, N. Y. Mr. Chapman esteems him as nearly invaluable and refused, I believe, \$1000 for him at Utica last season, where he carried the first premium.—*Halton* effected a very striking improvement upon my stock. It had frequently happened that my heifers, although possessing very good points, were somewhat apt to droop in the hind quarter. This has entirely disappeared in every animal got by *Halton*.

I have thus, sir, given you some details of my Short-horn breed. I fear I have trespassed further than is reasonable upon your patience and your pages and shall, therefore, only add, that in common with all, who feel interested in the agricultural advancement of Canada, I beg to tender you my humble thanks for your unwearied perseverance in the great work, and to express an ardent hope, that our farmers in all parts of the Province, will testify their approbation, by promoting in every possible way the circulation of your Journal.

I remain, Dear Sir, very truly yours,  
ADAM FERGUSON.

Woodhill, Jan. 26, 1853.

#### MR. PARSONS'S LETTER.

*To the Editor of the Agriculturist :*

DEAR SIR,—By some strange accident I did not get sight of your January number until just as I was leaving home on the 28th of that month, after a detention of some weeks by sickness, I therefore had no time to reply to Mr. Sotham's *impertinence*.—Besides my own business is of much more importance to me, than the answering of his unmeaning letters. Since I left home I have had a serious relapse at Hamilton, and have been too unwell whilst here, and too much occupied with business matters even to turn my thoughts towards Mr. Sotham or his polite effusions,—but to which I promise some attention at my first leisure.

I am, Dear Sir, respectfully yours,  
H. PARSONS.

Toronto, 18th Feb., 1853.

[Of course Mr. Parsons is entitled to a rejoinder, which must be regarded as the termina-

tion of the controversy between himself and Mr. Sotham. Any communications, however, either in the form or spirit of that of Mr. Fergusson, contained in this number, we shall gladly insert, whatever side they may advance, and come from whom they may.—[EDITOR.]

### COMMON SCHOOL EDUCATION.

STAMFORD, C.W., Feb. 1st, 1852.

*For the Agriculturist:*

MR. EDITOR,—As the education of the masses is now engaging a large share of public attention, permit me to make a few observations on the following extract from the report of R. L. Henderson, Esq., Wolfe Island, page 163 of the Chief Superintendent's expose for 1850 :

"There is one branch of study very much neglected in all common schools,—that is *Composition*. Every child who understands the elements of English Grammar, ought to be taught to compose. It is not sufficient to write a simple copy every day, in addition to learning a grammar lesson. It is possible for a boy to be a tolerable good grammarian, and yet be totally deficient in that most essential characteristic of a scholar—the art of expressing himself in grammatical language. Indeed, the Board of Public Instruction for this County (Frontenac), have had painful evidence before them, that many, very many teachers themselves—even good grammarians and good arithmeticians—were totally incapable of writing a few consecutive sentences grammatically."

Teachers can only teach what they have themselves learned. Why not make language (the every day want of the industrial classes) the pivot on which all the studies of the common school turns, instead of figures? The first four rules in arithmetic, well learned mentally, and on the black board, are sufficient for all common business. This accomplished, why not study language (not rules), but language itself, by exacting from every pupil a recitation of a sentence or paragraph (according to his ability) of the yesterday's reading lesson? there is composition without rules, spelling included; train in this way, and the composition class as now taught will be much more profitable to the pupils. We want men for the age; by an extension only of the present system, the full benefit is not realized; we increase the thickness of the strata—not improve its quality.

Had the Chief Superintendent satisfied himself with threading the wilderness of figures, he might have been at the plow tail until now. He wisely determined to study language; this elevated him to his present responsible and all-important position in society, and this only will keep him there. Language is the want which our schools can and must supply, by following

nature in all the movements of mind, from the active intelligence of the child, who learns to talk without rules and without effort, and would learn to write compositions in the same way, were the mind not occupied with comparatively useless studies.

The teacher who can best instruct his pupils to classify, arrange, and describe orally and in writing, the familiar and numerous objects around him, will confer a far greater benefit upon his pupils, than he who teaches the arrangement of figures. Words rightly spelled and properly selected, constitute the end and aim of all school learning; and what numbers pass their school probation without knowing how, as Mr. Henderson says, to write two consecutive sentences grammatically; and is it ever likely pupils can learn what the teacher is not qualified to teach?

The Wolfe Island Report is the only one out of nearly one hundred that suggests a practicable improvement, to meet the wants of the age. We have a Bureau, and a Chair of Agriculture; we have our Normal and Model Schools; we have the best wishes of the talented and enlightened of all parties; but we have not teachers of our common schools able and willing to teach their pupils what is most wanted, *Composition*; so that every child may share in the advantage according to his school opportunities.

Proposals are issued for an Agricultural Department in the University of Buffalo, and will likely be completed, giving a few a decided advantage over the less fortunate; our cities and towns have the power to concentrate their growth in a noble and substantial building, employ efficient teachers all the year, with apparatus and every facility for acquiring knowledge, while many of the small agricultural districts are in a worse position than before any common school law was passed.

Yours, &c.,

JAMES JONES.

We quite agree with our Correspondent that the practice of Composition in our Common Schools, is a matter of the first importance; but to be expert in such a practice it is essential that the pupil should not neglect the study of any subject which comes within the range of an ordinary education. Before a youth can compose correctly and readily in his own language, he must not only understand the meaning of words, and how to arrange them properly into sentences,—a work, by the bye, that will require careful and constant practice; but he must likewise study the nature and relation of things, or objects, in order to obtain *ideas*, of which words are the mere representatives. We cannot agree with our correspondent that many of our small agricultural districts are educationally in a worse condition than prior to the passing



of the present School Law. On the contrary, we think that progress is being made in every district; in some, no doubt, more rapidly than in others; and taking all things into due consideration, our new and improved school system must be regarded as highly successful, and the results, as stated in Dr. Ryerson's Reports, are truly satisfactory and encouraging. It must in the nature of things take a great deal of time, patient study and observation, accompanied by no ordinary degree of persevering exertion, to develop a system of popular instruction for a whole people, and to carry it fully into practice. Only let us exercise faith and patience, each one lending the good work a helping hand, speaking for it a kindly and encouraging word, and we shall soon have the gratification of seeing not only the practice of English composition generally admitted into our common schools, but also the more useful and practical sciences, and the principles of the industrial arts; including that of Agriculture. If our public educational system be only faithfully persevered in, modified, of course, as experience may suggest, the common schools will assuredly become the means of preparing many youths in the country for resorting, during the winter months, to our Colleges and Universities, for the purpose of still further prosecuting the study of the higher branches of science and learning. The present able and indefatigable Chief Superintendent will not, we feel confident, rest satisfied till he has achieved so desirable and beneficial a result.

—EDITOR.

#### PROGRESS OF CANADA.

That this fine Province is making a rapid and healthy progress in all the great elements of national prosperity and happiness, no one who is capable of forming an opinion on the subject can for a moment doubt. Every where progress, more or less, seems, as it should do, to be the order of the day. In our last we selected some interesting facts from the local press, in illustration of this principle; and it would be an easy task to multiply instances of a similar kind. Below we insert an article from a recent number of the *British Colonist*, on the progress of Toronto; and another from the *British Whig*, on the manufacturing state and capabilities of the rising village of Gananoque. The descriptions of our cotemporaries we can affirm from personal knowledge of the facts are by no means over-coloured. The new Mechanics' Institute in Toronto, the excavations for which have been commenced, is to be a building both capacious and highly ornamental, as we trust it will be useful and enduring. A new Government House is to be erected forthwith; and when the University Buildings, including a Botanic Garden,

and the improvements of the Park, shall have been completed; with the enclosure and laying out for public walks and drives in the extensive common to the West of the City, Toronto may justly boast of possessing public buildings and ornamental grounds within its environs, that will not be paralleled by any city on the Continent of America. It is a pleasing, if not a peculiar feature of Canadian progress, that the country keeps pace with, if not sometimes ahead of the towns,—the reverse being sometimes the case with our republican neighbours. Canada has before her a glorious future. May she prove worthy of the high destiny which nature and Providence, and an onward civilization, are doing so much to enable her to work out.

#### THE COUNTIES' COURT HOUSE, AND PROGRESS OF TORONTO.

The Municipal Council of the Counties of York, Ontario, and Peel, met on Monday last, for the transaction of business, in the New Court House, in Adelaide Street. This building is worthy of notice. In it, besides the Court Rooms, are the Counties' Council Chamber, and the accompanying Offices. Looking at the front of this building from the opposite side of the street, the spectator is struck with its heavy, massive appearance. Critics will differ respecting the taste displayed in this particular. For our part, we will only say, we think it a little too heavy. The inside arrangements are of the most convenient kind; and as far as we have heard, the members of the Council are much pleased with their chamber. It manifests utility, joined with good taste, both in its furniture and arrangements. The adjoining Committee rooms are sufficiently large, and appear well adapted for the purposes intended. The court rooms up stairs are spacious, and they appear to possess every requisite. The passages are all wide and elevated, and this is a feature which we much admire. The building is constructed of white brick, with a free stone front.

We may take the occasion of the first meeting of the Council in this new Court House, to notice the rapid progress which the City of Toronto is making in extent and improvements. Turn on whatever side we will, or in whatever direction, new buildings are springing up, and some of these are of a magnificent character. Viewing this rapid improvement, we considered it a matter of some interest to ascertain how many new buildings had been erected in Toronto during the past year, and accordingly dispatched a special Reporter to drive round the city and count them. Our Reporter, after going through all the streets, or at least all of any importance, states that he counted 213 buildings, either erected during the past year, or in course of erection. This is certainly a very large number, but we understand that building will go on upon a scale even more extended during the present year.

The number stated by our Reporter includes buildings of all descriptions, from cottages up to mansions that may justly be denominated magnificent. Stores and warehouses and public buildings are also included.

It would be manifestly impossible, in the space of a newspaper article, to enter into a detailed description of all the buildings well worthy of notice. But we must glancé at some of them; and to commence in the neighbourhood of the new Counties' Court House, one of the first things that strikes the eye is the new Post Office. It is not quite finished, but it very shortly will be. It is built of stone, and has a very substantial air. The style of architecture is an imitation of the Ionic order. Its interior arrangements seem convenient, and it is no doubt sufficiently large for the present needs of the city. It will be very durable, and this makes us think there is some doubt if it will be sufficiently large to answer all the requirements of Toronto in a number of years hence.

Immediately opposite the new Post Office, is a splendid block of buildings intended for commercial purposes. These are the York Chambers, owned by John Dickson, Esq. They are built after an approved style of modern street architecture, and are in every respect a credit to Toronto. They would be looked upon as first class buildings in a much older city than Toronto.

At a little distance from these, on Yonge street, is the new store of Messrs. Ross, Mitchell & Co. This is a splendid edifice; the front is of free stone and white brick. The effect it produces is very good, and altogether it is the most noticeable store in Toronto.

Not far from that, on the corner of King and Bay Streets, is the magnificent free stone mansion, in process of erection for Mr. Cawthra, the millionaire. It will far exceed in splendor any private dwelling in Toronto. Every expense is lavished upon it. In King Street, Yonge Street, and other streets, numbers of substantial and very elegant shops are being erected. We have not space to go into particulars of these, but all our city readers will at once remember them upon this general allusion.

The upper part of Nelson Street has, almost during the past year, sprung up from a wilderness to a fashionable quarter of the city. Much taste is displayed in the architecture of some of the houses. The drive up this street in the summertime to Yorkville, avoids the dust and crowds of Yonge Street, and no doubt it will continue to progress as hitherto. Above Queen Street, it has the name of Jarvis Street.

Fine dwelling houses are in procession of erection at all the extremities of the city. Many of them manifest the correct taste of the owners or builders; while others, as is natural, shew much ostentation and vulgarity. But there is no disputing tastes, and we shall not stay here to do so. We accept all as an evidence of the growing wealth and prosperity of Toronto. Great numbers of cottages and small dwelling houses are also in the course of erection, particularly in the eastern part of the city. We may also add, a few factories.

We next come to the new churches. Foremost is the magnificent Anglican St. James's Cathedral. This is built after the gothic style of architecture. The material for the most part is of white brick, but freestone is used for the porticoes and windows. Nothing can exceed the

graceful elegance with which all its proportions blend together. It is not quite finished, but still sufficient to show the most elegant specimen of church architecture in Canada. In the western part of the city a large Roman Catholic Church is in progress of erection. It displays good taste in its architecture. Not far from that is a chapel of one of the Protestant denominations, the name of which we have not learned. It is very nearly finished. A new chapel of the Covenanter Presbyterian Church is also erecting near the Anglican Church of the Holy Trinity.

A new wing of Trinity College has just been finished—or rather the west end of the south face. The perspective of Trinity College from Queen Street is now very striking, and challenges at once the attention and admiration of every passer. Its numerous turrets and pointed windows, together with its light and graceful proportions, manifest elegance such as one seldom sees, as well as classical taste. We believe it is the intention to erect three more sides, until a quadrangle is formed. But take alone the south face, measuring 220 feet in length, and it cannot be matched for beauty in Canada. Toronto has reason to be proud of this building, however much divers doctors may disagree respecting the occasion of its erection, or the doctrines taught therein. Upon entering the college the arrangements are all of the most convenient kind. It stands upon a piece of ground of 20 acres in extent, and commands a fine view of the Bay and Lake Ontario.

The Normal School we have recently described, so it will be sufficient on this occasion to make only an allusion to this building. The common school houses being erected appear to be large, substantial, and well adapted for their intended purposes.

This must be enough of detail for the present. Toronto may justly be proud of its improvements, and progress in population and wealth. But a few years ago it was contemptuously called "Muddy Little York;" and a few years before that, a writer wondered why such a frog marsh should have been selected for the site of a city. True, in some respects the site might not have been very tempting, but its position was more than enough to atone for all small evils. With the finest and most accessible harbour on Lake Ontario, and with a magnificent country behind it, which the new railroads will open up, Toronto may hope to increase faster than it has yet done; and this is saying very much, when we look at the comparative census of the city for some years back. We will give the figures, although they have previously appeared in these columns: In 1826, the population of Toronto was 1,719; in 1830, 2,860; in 1834, 9,254; in 1838, 12,571; in 1842, 15,336; in 1846, 20,562; in 1850, 25,166; and in 1852, 30,775. These figures require no commentary. We will only add, that those of our citizens who entertain very sanguine hopes for the future may not justly be charged with extravagance.

#### THE VILLAGE OF GANANOQUE.

The good people of Kingston are certainly the most sleep-headed population of any city in Canada West. Within an hour's steamboat sail-



ing in summer, and within a couple of hour's sleigh driving in winter, is the Manufacturing Village of Gananoque, the very Lowell of the Province; yet we venture to assert that there are not ten persons in Kingston who have ever been at Gananoque, or know anything about it, except what they are told by others, or what they read annually in the *British Whig*, just after the Editor's yearly visit. It is to enlighten this darkness, that we have devoted more than usual space in speaking to-day of the present state and future prospects of this rising manufacturing town, though in a very desultory way.

Gananoque is a village containing about a thousand inhabitants, situated on the north Channel of the St. Lawrence, about eighteen miles below Kingston. A rapid river of the same name, with a never failing supply of water, comes from some distant lakes in the interior, and tumbles over some thirty or forty feet of rocks about a quarter of a mile from the parent stream. This affords a most abundant water power, and is the source of the present prosperity of the village and its future greatness. This water power, and much of the surrounding territory, have long been in the possession of the Macdonald Family, who, when Flouring Mills were a productive means of revenue, built and owned the largest and finest in the province. But the manufacturing of Flour has become of less importance than heretofore, and other and more remunerative Manufactories have recently been put up, and are in productive operation. It is to mention the latest of them that is the present task. Passing the Flouring Mills of the Messrs. Macdonald, which have often been mentioned by us, the first new Factory under notice is the Nail Factory, managed by Isaac Briggs. Here are made Cut Nails of every description, and sold at such prices as to render importations from Montreal wholly unnecessary. Last year Mr. Briggs made Hoes, and had such success in the sale, that this year he has, in conjunction with one of the sons of the deceased Judge Jones, put up an additional large stone building for the special manufacture of Hoes, Spades and Shovels. The machinery to make these things cost upwards of \$3,000 in Massachusetts, and is most perfect of its kind. This Factory is to go into immediate operation, and it is by the establishment of such, that Canada owes her growing prosperity. The second establishment under notice is the Cloth Factory, with Carding and Fulling Mills, entirely put up since July last, by two comparative strangers to the village, Messrs. Kendall and Johnson. This is a large building not yet finished. The want of a Cloth Factory had long been felt in the village and vicinity. Mr. F. D. Britton, the Merchant, has also within the past year built an extensive Potash Factory, where both Pots and Pearls are made; contiguous to which is a new wharf, at which steamboats stop. These, with the exception of several new stores and dwelling houses, are the chief improvements of Gananoque during the year 1852; but so prosperous is the state of things there, that no limit can be placed to those about to be erected this present year, among which is a Paper Mill, of which more at leisure. The undermentioned Factories were described by us last winter:—

The Flour Barrel Cooperage of Messrs. Macdonald.

The Shingle Factory of Capt. Chrysler.

The Hoe Handle, Broom Handle and Rake Factory of Mr. Robert Brough.

The Pail Factory of Mr. J. K. Lawton.

The Saw Mills of Messrs. Madonald, and others.

There are doubtless some others that we have neglected to notice, but the truth is, there are so many things to be seen during a short visit to the village, that it is excusable to pass some over.

#### NEW AND IMPROVED BREEDS OF FOWTS.

As this subject is exciting much attention on this Continent as well as in Europe, (the Poultry department of our last Canadian Exhibition may be adduced in proof,) we insert some account of the late Poultry Show held in London, from the *Mark Lane Express* of January 17th. Hitherto the subject of Poultry has received but little attention in England, except by amateurs and cottage farmers. The bulk of British farmers regard it as too insignificant for special notice, although it would appear that upwards of one hundred millions of eggs are annually imported into the English market from foreign countries, principally France. Our readers will find much useful and interesting information from what follows, and we trust it will prove suggestive of improvements in this country.

#### THE GREAT METROPOLITAN POULTRY SHOW.

The first show of the society for establishing in the metropolis an annual exhibition of poultry, pigeons, and rabbits was opened to the public on Tuesday. The society enjoys the patronage of many noblemen and gentlemen of distinction, including the Duke of Rutland, the Marquis of Salisbury, the Earls of Derby, Stanhope, Cottenham, Stradbroke, Harrington, Ducie, Clarendon, Lichfield, and Stamford; Lord Feversham, Lord Hastings, Lord Sandys, the Marquis of Granby, and Lord Guernsey; and one of its main objects is, according to the rules, "to afford an opportunity to the public to improve their collection." It is therefore provided that all the specimens figuring in the show shall be offered to competition by public auction during the exhibition, the proprietors being required to state the value they place upon the birds or animals they exhibit, although they are not precluded from naming a prohibitory price. The place selected for the exhibition was the Baker-street Bazaar, where the show of the Smithfield Cattle Show has been held, and the extensive and commodious galleries of the building are admirably adapted for the purpose. On Monday night the subscribers and a number of invited visitors were admitted to a private view of the collection, which was of a novel and interesting character, presenting a far more extensive combination of that class of the

feathered tribe termed "domestic fowls" than was ever before exhibited in any one place. The show included fowls, turkeys, geese, ducks, pigeons, and rabbits, but among them what is ordinarily spoken of as the fowl tribes, vastly preponderates, and in this little world of fowls the Cochin Chinese had a decided majority. The Cochin China fowls were introduced into this country some half-dozen years ago under royal patronage, and now enjoys a preference over the Dorking game and Hamburgh fowls. The respective merits of these classes can, however, only be determined by connoisseurs, and it is enough to say that the Cochin China fowls in the collection were of remarkable size and beauty. The price set upon some of these birds seems almost incredible. For a pen belonging to Mr. Fairlie, of Cheveley-park, near Newmarket, consisting of a cock and three hens, no less than 60 guineas were required. It may, however, be observed that all the hens have been exhibited separately at provincial shows, and that each has gained a prize; so that the pen was probably as valuable a one as could be found in the country. In class 15, a pair of Cochin China fowls cost £25. Mr. Fairlie, of Cheveley (who had in the collection 29 pens), showed a pen of light speckled Scotch fowls, from Ayrshire, known in the north as "dummies," or "bakies," and which are remarkable for the extraordinary shortness of their legs. Among those which attracted marked attention were some exceedingly fine Poland fowls, with white topknots; a pen of three geese, weighing together 48 lbs.; a pen of gigantic pigeons from India, whose heads are surmounted by a sort of plume, not much unlike the feathers of a peacock's tail; several very fine Australian pigeons, the beauty of whose plumage was much admired; a large collection of pigeons, including some very good specimens of fantails, tumblers and carriers; and some remarkably fine turkeys, bantams, and rabbits. So great value is placed upon the eggs of many of the birds in the exhibition, that eight policemen of the detective force were continually on the watch to prevent their abstraction by persons employed in the building or by visitors.

The success of this extraordinary show must have fully equalled the expectations of its most sanguine promoters, especially considering that at this period of the year London is almost deserted by those classes who may be supposed to take the greatest interest in matters connected with agricultural pursuits, and who would have been most likely to patronize such an exhibition as that now submitted to the public in the galleries of the Baker-street Bazaar. On Tuesday, when the charge for admission was five shillings, some hundreds of visitors, including several members of the aristocracy, inspected the collection. On Wednesday and Thursday the entrance-fee was reduced to one shilling, and though the unfavorable weather on Wednesday must have prevented many persons from visiting an exhibition so far removed from the centre of London, yet, either owing to the novelty of the show, or to the extraordinary mania for poultry-rearing which has been excited of late years, the Bazaar was on

both days thronged by such crowds that locomotion was rendered somewhat difficult. On Wednesday upwards of 5,000 persons paid for admission, and on Thursday the number of visitors must have been much greater. On Friday 12,000 persons entered. The excellent regulations of the police, however, prevented anything like disorder, and under their directions the visitors proceeded in a continuous stream along the galleries of the Bazaar, on each side of which the pens containing the animals exhibited were arranged.

We subjoin a statement of the number of classes and pens exhibited; and it may be observed that each pen contained from two to four animals:

Fowl.	Classes.	Pens.
Spanish .. .. .	3	36
Dorking .. .. .	7	70
Cochin-China.. ..	7	249
Malay .. .. .	2	10
Game .. .. .	8	48
Hamburgh .. .. .	8	57
Poland .. .. .	9	37
Bantams .. .. .	4	63

There were also 25 pens of other distinct breeds of fowls, 11 pens of geese, 33 pens of ducks, 10 pens of turkeys, 249 pens of pigeons, and 48 pens of rabbits.

Although the regulations of the club under whose auspices the exhibition took place required that the proprietors of stock shown should affix a value to their specimens, which were to be submitted to public auction during the exhibition, many of the prices given in the catalogue were absolutely prohibitory. Several pens of the Cochin-China fowls and chickens were valued at £1,000, £500, £200, 100 guineas, and £100, while others were priced—doubtless for sale—at sums varying from £80 down to £1 ls., according to the age, condition, and breed of the birds. The value placed on Spanish fowls varied from 100 guineas to 2l. 10s. a pen. The Dorking, Malay, game, Hamburgh, and Bantam fowls were priced at sums ranging from one hundred guineas to £40, 25 guineas, and as low as £1 a pen. Two of the pens of Poland fowls were valued at £1,000, of course a prohibitory price, the proprietors being probably unwilling to dispose of them at all, but the selling prices seemed to vary from £50 downwards to 2 guineas. The highest price placed upon a pen of geese was £21, and the lowest £1 10s. Of the 33 pens of ducks exhibited, one, belonging to Mr. Fairlie, of Cheveley-park, was valued at £100; but the price placed on the other pens varied from £21 to £1 10s. Some of the turkeys exhibited were of great size and of remarkably fine plumage, and the pens were valued at from £10 10s. to £3 3s.

The *Mark Lane Express* in reference to the Exhibition observes:—

The Metropolitan Poultry Show must be regarded as a most successful speculation. Our own wish will be to rank it as something more. The result of the last week will no doubt lead to the permanent establishment of a society which, with efficient management, can scarcely fail in doing some good. In no part, either, of the



United Kingdom, were the services of such a society so much required. The best of everything, says the contented citizen, is sure to come to London. The best meat, the best fish, the best fruits, are all at his command; and at prices, too, not generally extravagant or out of reach. The weak point, however, in the supply, has long been with the eggs and poultry. A chicken on a London man's table is still something of a *rara avis* and a luxury; while one's faith is never more severely tested than with "a new-laid egg." France, or the further resources of the continent, may furnish a supply for puddings and omelettes; but here we wisely stop. To relish an egg for breakfast, we have to visit our friends in the country, who for their part are ever anxious to treat us to what they well know is at home proverbially unattainable.

It is somewhat difficult to account for such a deficiency. In these days of quick and cheap transit, one would imagine that a regular supply might have been commanded from the country; but it is not so. Poultry, we repeat, is yet far above the average of other articles of common consumption, while the egg market is much more dependent on foreign than home production.—Two or three questions naturally arise here. Have the different breeds of fowl been almost generally neglected? Or, cannot poultry be reared in far greater numbers, and yet with a fair profit? The solution of these points may depend very much on the other. Experience so far tends to assure us that very little attention has been paid to the breed, and very little reliance placed on it as a marketable commodity.

The great virtue of the common barn-door fowl consists in his being "a good doer;" and to this in a great degree may be traced the little care shown towards him. The "barn-door" can take care of himself, and thrive and fatten on the slightest pickings thrown in his way. We are by no means prepared to underrate this recommendation. To pay, as a part and portion of farm-yard produce, this must ever be one of the first essentials in any efforts made to improve the species. Still this is not all. Our common sort of fowl may be as economically and easily prepared for the table, and he is certainly amongst our best dishes when once placed upon it. But though he thrive, he does not multiply anything like that proportion required; the hens too often are poor or only casual layers, and so the supply still continues insufficient in quantity, and, as a consequence, unsatisfactory in price.

The aim of the poultry-shows must be to effect a remedy. Let the most productive varieties be sought out and encouraged. According to all accounts, the Cochins in this respect well deserves the eminence now allowed him. To be truly useful, however, his value, we expect, mainly depends upon the judgment with which he is crossed with other breeds. In his native purity he is an overgrown and almost unsightly bird, greatly inferior in flavor to many sorts less prized, and reared, we should assume, at far more cost. Where the common fowl would fatten, the Cochins would starve. In perfecting our different breeds of cattle, the first point has been to find

those which will do best on the least food. It must be the same with our poultry; and when we can feel satisfied that we are really proceeding in this direction, we shall cavil no more at a long-priced Cochins China than we should at a hundred-guinea shorthorn.

So far it is the old argument of the race-horse over again. He may not himself be fit for the collar or the saddle, but without his blood we should never have had the riding or harness horses for which this country is so celebrated. But in citing this case, let us not be above following it out. A cross of the Arab told with extraordinary effect; while the pure Arab, on the other hand, has never here paid for persevering with. So, we take it, will it be with the Cochins China. He has some qualities that we much require, and that it must be to the interest of our breeders to obtain. Let them, however, well consider what these are, and not run riot for a feathered leg, a fancy color, or a monster growth.

The Metropolitan Poultry Show, we repeat, may do essential service in calling attention to and improving our breed of domestic fowl.—Much still depends on the direction, and popularity alone—in the attendance of visitors that is—must not at once be assumed as legitimate success. The one great thing to guard against, is this becoming a mere "fancy" display. In London, be it remembered, we have a continual stream of idlers and sight-seers quite as ready to support anything extraordinary as that only useful. To these curiously headed pigeons, or long-eared rabbits, will often furnish sufficient attraction for a visit; but on these the real strength of the Society can never rest. Fancy lots and fancy prices may be always commanded from the curiosity and competition of a London audience, while the proper aim and object of the Metropolitan Poultry Show should be something widely different. The mania just now at its height may have given something of an artificial and amateur character to the opening exhibition; but we hope to see it work on to much practical utility.

## COCHIN-CHINAPHOBIA.

*From the Times.*

The Princess in the *Arabian Nights*, who, after harmlessly exhausting the treasures of the magical world, was ruined at last by wishing for a roc's egg, ought to point a moral for some of the lady visitors at the Poultry Show in Baker-street this week. Fowls at 60 guineas the coop, or £25 the pair, must constitute an awkward item even in the most lordly establishments. One lady, we observe, was wise enough to "realize" at the rate of £370 for her brood of 110 chicks, many of them only three months old; but where there are sellers there must needs be buyers, and somebody must have paid rather highly for a poultry fancy. The "China monsters" of our grandmothers' days appear to have turned up again in the shape of living animals with as great an effect as ever, and nothing just now seems so irresistibly attractive as a large gawky fowl without a tail. Even honesty itself is not expected to be proof against the seductions of this new mania, for, so precious

are the eggs of the most hideous birds, that "eight police officers of the detective force are continually on the watch to prevent their abstraction by servants or visitors at the show."

It is curious to observe how certain parts of the world seem productive of the best variety of fowls, which, nevertheless, can be readily naturalized anywhere. The pheasant, as his name imports, came from the East, and yet anybody would suppose that he pertained by nature to an English coppice. The peacock, a truly Oriental creature, is one of the hardiest of birds about a country-house; and no species of fowl yet introduced has been found eventually to require any more care than common barn-door poultry. Our domestic stock has been found improved from the resources of the Asiatic Archipelago. Bantam, a place not far from Batavia, at the western extremity of the island of Java, furnished the name and variety now so familiar. The jungles of Malacca and Sumatra sent the Malay species, still highly fashionable; and the new coast in the track of the old East India merchantmen—the coast of Cochin China—produced the wonder of the present week. It is but a few months since despatches reached us insisting, with singular emphasis, on the treasures of this neglected region, and on the desirability of cultivating the good will of the young sovereign, who had just succeeded an intractable father in his capital city of Hue. The writer was not aware of the extraordinary point which five or six weeks more would give to his communications. If the present fashion prove lasting, his Cochin-Chinese Majesty may promptly treble the revenues of his kingdom, and enter with considerable pretensions into the commercial system of Europe.

The subject, however, though frivolous enough at first sight, is not without a certain suggestiveness of its own. We hope this poultry exhibition, like all other exhibitions, great or small, is directed to some practical good. Its professed object, we observe, is "to afford an opportunity to the public to improve their collections." This is all very well. Every material improvement in the breed of animals has originated in a certain degree of "mania." If rich amateurs had not lavished their money upon the turf, we never should have had such good horses commonly available; and the same may be said of short-horns and southdowns—of prize sheep, and price-less pigs. But the operation of the poultry mania is not so directly visible. As to the "opportunity" so liberally designed, we fear the "collections" of the genuine "public" seldom exceed a single pair of specimens, picked for the pot; and how, or in what degree any "improvement" is to reach these examples is the identical point we are desirous of discovering. Hitherto our novelties in poultry have all been accepted on good sensible terms. The Dorking fowl excelled all others in the invariable whiteness and delicacy of its flesh; the Polish hens produced eggs in extraordinary quantities, though of a somewhat inferior flavour; and the usefulness of the little bantam, after its kind, is everywhere acknowledged. Now, if the Cochin China breed really give us poultry of a finer and

cheaper description than we have had before, the "mania" will have done its proper work; nor is there any great objection to even a fabulous price for some Godolphin Arabian in the shape of a patriarchal cock, more scraggy, more denuded, and more generally frightful than the rest of his kin. If, however, there is no such consummation in prospect, and if the Baker-street display is concerned with no better "fancies" than those of fainted pigeons and lop-eared rabbits, we are certainly making a very pretty figure of ourselves at the opening of a new year.

We speak with the more earnestness on account of the very considerable margin for improvement actually existing in the present state of our poultry markets. The price paid for fowls in London is preposterous, even according to their present rate of multiplication and increase, and if, by crossing the breed with these interesting importations, the productiveness of the general stock should be augmented, it will be out of all question that such charges should continue. If the poultry fanciers of the present season are really discharging any public duty, they must needs anticipate greater cheapness and greater abundance in the breed of our domestic fowls. We really feel compelled to assume that the Cochin Chinese variety cannot, even in the eyes of fashion, be considered simply ornamental, and that its merits must needs reside mainly in its uses. More eggs, therefore, more fowls—of a better description each—ought to be ultimately producible; and this improvement ought to act on the markets of the country. There is no reason why poultry should not be considered as a species of agricultural stock, and turned to as good account both for producers and consumers. The consumption of fowls, in fact, is exceedingly large, and, but for their unnecessary costliness, would be larger still. For this unnatural price there is no kind of excuse. The means of transport provided by railways so completely answers all purposes, that every county in England may either transmit its produce to London or select its own market elsewhere at a very small cost of time or money. Fowls, too, travel more easily than any other animals. They can be despatched alive or dead with equal facility, and there are no gate dues or taxes to heighten their price on a metropolitan stall. Yet, although 2s. 6d. a couple would, according to all calculable expenses, be a remunerative charge, we are compelled to pay at least double.

We trust that some desirable results of the description referred to will contribute a character of practical utility to the poultry mania of 1853. A fowl after all is not materially the more precious for being "gold" or "silver pencilled," "white crested" or "doubled combed," though "double-breasted," if procurable, might be an eligible quality to introduce. One variety, we see, styled "dumplings" or "bakies," attracted great admiration "for the shortness of their legs;" but we scarcely understand the advantage of this feature, unless, indeed, they will go into a smaller saucepan. The end, in short, of all such exhibitions as that now open, should be the improvement, not of private "collections," but of the public stock, and the breed deserving the



prize is not that with the largest comb or the rarest plumage, but with the best promise of general usefulness. If, twelve months hence, eggs should prove better, chickens cheaper, and all poultry more abundant than now, we shall be the first to acknowledge the benefits of the Baker-street show; but if the result is confined to the monstrosities of private "collections," there will be little credit gained by the notoriety of this week's display.

#### NEW MODE OF PREPARING FLAX FIBRE.

Since attention was first directed to the improvement and extension of flax cultivation in Ireland, an association was organised at Belfast, in the year 1841, to endeavour to accomplish these ends. It has been evident that a great desideratum in the treatment of flax, in order to obtain a fibre of good and even quality suited for manufacture, was the adoption of some plan by which uniformity could be arrived at, and the waste and loss arising from the imperfections of the system generally practised by individual growers obviated.

In order to attain this end, it appeared requisite that a division of labour should be carried out, that the farmer should be merely the grower of the plant, and that persons of capital, education, and scientific skill, should purchase it from him, and convert it, by some effective process, into marketable fibre.

Every project having this end in view has, consequently met with great attention from the Royal Flax Society and the public; and a plan, embodying points of great novelty, having been lately brought forward by Mr. Watt, and put in operation at Belfast, a meeting of those interested in the matter was held on October 2nd, at which the inventor was present, when it was arranged that a careful examination into the process employed should be made by a committee then appointed.

The trial was begun on the 21st October; and although all the points desirable to be ascertained have not yet been fully investigated, the committee are in a position to report to this meeting a number of facts already ascertained, which they consider of interest and importance.

Mr. Watt's system may be briefly described as follows:—The flax straw is delivered at the works by the grower in a dry state with the seed on. The seed is separated by metal rollers, and afterwards cleaned by fanners. The straw is then placed in close chambers, with the exception of two doors, which serve the purpose of putting in and discharging the straw; the top, which is of cast iron, serves the double purpose of a top and condenser. The straw is then laid on a perforated false bottom of iron, and the doors being closed and made tight by means of screws, steam is driven in by a pipe round the chamber and between the bottoms, and penetrating the mass, at first removes certain volatile oils contained in the plant, and then is condensed in the bottom of the iron tank, descending in a continuous shower of condensed water, saturating the

straw, and forming, in fact, a decoction of the extractive matters which attach the fibrous and non fibrous portions of the plant. This liquid is drawn off from time to time, and the more concentrated portions are used for feeding; the process is shortened by using a pump, or such arrangements as will repeatedly wash the mass, with the water allowed to accumulate. In about 8 to 12 hours, varying with the nature of the straw, it is removed from the chambers, and having been robbed of its extractive matter without decomposition, it is then passed through rollers, for the purpose of removing the epidermis or outer skin of the plant, of discharging the greater part of the water contained in the saturated straw, and, while in the wet and state, splitting it up longitudinally. The straw, being free from all products of decomposition, is then easily dried, and in a few hours is ready for scutching.

In the experimental trial, personally superintended, throughout all its details, by the committee, a quantity of flax straw, of ordinary quality, was taken from the bulk of the stock at the works, weighing  $13\frac{3}{4}$  cwt. with the seed on. After the removal of the seed, which, on being cleaned thoroughly from the chaff, measured  $3\frac{3}{4}$  imperial bushels, the straw was reduced in weight to 10 cwt. 1 qr. 21 lbs. It was then placed in the vat, where it was subjected to the steaming process for about 11 hours. After steeping, wet-rolling and drying, it weighed 7 cwt 11 lb; and on being scutched, the yield was 187. lbs of flax; and of scutching tow, 12 lbs.  $6\frac{1}{2}$  oz. fine, and 35 lbs 3 oz. coarse. The yield of fibre, in the state of good flax, was, therefore, at the rate of  $13\frac{3}{4}$  lbs. from the cwt. of straw, with seed on, 18 lbs. from the cwt. of straw without seed;  $26\frac{1}{2}$  lbs. from the cwt. of steeped and dried straw.

The time occupied in actual labor in the processes, from the seeding of the flax to the commencement of the scutching, was  $13\frac{1}{2}$  hours, to which, if 11 hours be added for the time the flax was in the vat, 24 hours would be the time required up to this point. The scutching, by four hands, occupied six hours 16 minutes. But, in this statement, the time required for drying is not included, as, owing to some derangement in the apparatus, no certain estimate could be made of the actual time required in that process. It would appear, however, that about 26 hours would include the time necessary, in a well-organised establishment, to convert flax straw into fibre for the spinner.

The cost of all these operations, in the experiment, leaving out the drying, for the reasons noted, appeared to be under £10 per ton of clean fibre, for labor, exclusive of general expenses.

A portion of the fibre was sent to two spinning mills to be hackled, and to have a value put upon it. The valuation of the samples varied from £56 to £70 per ton, according to the quality of the stricks of fibre sent, and the yield on the hackle was considered quite satisfactory.

On the results of this experiment, which was not necessarily of a limited nature, the committee think it best to offer no general remarks. They are sufficiently favorable to speak for themselves. It remains to be ascertained whether the qualities

of flax fibre, prepared by this method, are such as to suit the spinner and manufacturer. They have been informed, by Mr. Watt's system, that the yarn made from it appears equal in all respects to what is ordinarily spun from good Irish flax, of the finer sorts. They believe that, before long, information will be given by several individuals who are about to carry out more extended trials on the spinning and manufacturing departments.

The committee conceive that the most prominent and novel feature in this plan consists in the substitution of maceration, or softening, for fermentation. In the steeping of flax, both by cold and hot water, the fibre is freed from the substance termed gum, by the decomposition of the latter; while in Watt's system the maceration of the stem loosens the cuticle of the gum, which are further separated mechanically in the crushing operation, and after the drying of the straw, readily part with the wood, under the action of the scutch-mill. Before this statement, the committee wish to call attention to a very curious feature in Mr. Watt's invention. The water from the vats, in place of being offensive and noxious, as the case with ordinary steep water, contains ascertain amount of nutritive matter. This arises from its being an infusion of the flax stems, in place of holding in suspension or solution the products of the decomposition of the gum, and other substances contained in the stems. The inventor is now employing this water, along with the chaff of the seed-boils, for feeding pigs. It is of much interest, to note in how far this may be found practically to answer, as, between the seed, the chaff, and the water, by far the greatest portion of what the flax plant abstracts from the soil would thus be returned in the shape of manure. However this may turn out, the avoidance of all nuisance in smell, and of the poisonous liquid which causes some damage among the fish when let off into rivers, it is a matter of some consequence.

It is to be hoped that so promising a plan may on more extended experience, be found fully to warrant the high anticipations formed from what is already known concerning it.

(Signed on behalf of the committee),

RICHARD NIVEN, Chairman.

Belfast, November 3, 1852.

—*English Paper.*

#### THE POTATOE PLANT.

The potato plant is only an annual, empowered by God with two modes of reproduction. The one, like the oak tree, lives only for years; the other, like the acorn, liveth for ever. Both reproductions are deposits from the plant, different in chemical properties.

The knowledge of these truths explains the potato blight, and enables us not only to grow the plant, but also to regulate that growth as to quantity and quality at pleasure, quantity for the other animals, quality for man.

Here (exhibiting a potato stalk) is the plant. This stalk with its small fibres, is the annual.

These eight apples upon the top possess each from three hundred to three hundred and twenty seeds; each seed has the germ of a plant with seed lobes, which perform the same office to the germ that the yoke of an egg does to the germ of a bird, supplying it with nutriment until all its parts are perfected by germination to supply itself.

Hence the seed in the potato apple, like the acorn of the oak, the seed in the apple of the tree, or the egg of a hen. These eight potatoes at the bottom of the stalk possess each a quantity of eyes; each eye possesses the same property for a time that the seed or egg of a hen does; but the potato, like the tree and hen, becomes aged and past bearing: the oak lives after it ceases to bear, as do also the apple tree and the hen, and so also does the potato. But the oak, the apple tree, and the hen die from age, and why not also the potato? Has nature made it an exception?

(Two ingenious diagrams, which of course we have no means of representing, were here exhibited and explained by the Rev. Mr. Porter.)

The first diagram shows the potato existing for thirty four years in three states of being; first, as an ascending germ in blossom for five years; a potato, with apples, for nineteen years; and there not being any apples seen upon the stalks for the last eleven years, they then become descending germs, unable now to give any produce on mountain land, where they formerly grew. The law laid down in this diagram rules every potato, and the same law guides its seed; thus we find the plant to grow apples for nineteen years.

The second diagram shows the plant ascending in vitality for ten years, its longest day, and green from five to seven months, in proportion to its age; then descending, losing its vitality, from its tenth to its nineteenth year; at which period it remains green only five months and produces no seed. Thus the seed supplied by the parent plant at its longest period must of necessity be best and strongest. The descending germ of the tenth year will remain green only three months, and with little produce. Hence, seed from the plant at ten years is perfect; the other only in proportion to its place in the diagram; consequently I fear it is hardly possible to procure good seed now, and I question if ever perfect seed has been sown, except by fortunate accident, the belief hitherto entertained being, that the seed was only to give variety of kinds.

These diagrams demonstrate the practice by which we have lost the vitality of the plant, and demonstrate, too, the mode to regain and keep it.

The plant at transplanting is as perfect in all its parts as the oak, the apple tree, or the female bird from the egg. The root performs the same functions to the plant that the stomach does to the animal—absorbs juices from the earth and transmits them through one set of vessels to the leaves, which are a continuation and extension of the same vessels and matter. These extend their surface for absorption and transmission of air and moisture, assimilate the juices, and return them through another set of vessels to nourish and enlarge the various parts of the plant. Thus, the



leaves perform the same functions as the lungs of the animal, besides giving shade to the vegetable. These truths point out the true mode of cultivating ascending and descending terms, and also the potato. The plant from a perfect potato lives seven months, perfecting its fruit before it dies. The plant from a descending germ lives only from three to five months, unable at either stage to perfect its fruit. Therefore when the plant dies, the fruit not being ripe continues to absorb the decomposing matter in the leaves and vessels, until these vessels close. Consequently when we see the leaves getting spotted and black, and emitting an offensive smell from decomposing matter, we should at once dig the crop to save what potatoes exist, and turn the land into some useful purpose. This is what we, in our wisdom, call "the incomprehensible potato disease"—produced, you will observe, by our own neglect of the immutable laws of God and nature.—*Extracted from a Paper read before the Kilkenny Literary and Scientific Institution.*

### THE ONION WORM.

Within a few years, past, our gardeners, in many parts of the State, have been exceedingly annoyed by a little worm that would be found in the very heart of their young onions, which destroyed them entirely, if not eradicated in season. In some places it has been impossible to raise onions at all, and their cultivation has been given up. Almost every expedient has been tried to prevent the ravages of these little destroyers, but with very little effect. Indeed, there has been a good deal of obscurity in regard to the origin and habits of it, and, therefore, no very systematic course of prevention could be adopted understandingly.

We were pleased to find a chapter on this subject in the last *Granite Farmer*, communicated to that excellent paper by Hon. Edmund Burke, formerly Commissioner of Patents at Washington.

Mr. B. found that this insect laid a claim to the onion beds in his garden, and was destroying them both root and branch, affording him no prospect of having a single onion to flavor even a "hasty plate of soup" in the fall.

In searching out the causes that left him thus *onionless*, he says he found a description of it in Kollar's work on insects injurious to gardens," and he forwards to that paper, Kollar's description and history of this insect, a part of which we here borrow for the benefit of our readers who have heretofore had cause to mourn over their desolated onion beds in the spring.

The perfect insect or fly, says Kollar, is entirely of an ash grey color in the females, with black stripes in the males, (known to naturalists by the name of *Anthomyia Ceparum*,) the wings clear like glass, with blood iridescent reflections, and yellowish brown veins. It is found throughout the summer in several generations. The larva lives during that season singly, and also gregariously on the different sorts of leeks and onions, so that it often destroys the whole crop.

"The fly lays her eggs on the leaves of the onion, close to the earth. The newly hatched maggot bores through the first leaf and then descends between the leaves into the onion in its base, when it entirely destroys the bulb, which soon becomes rotten. It leaves the onion to undergo its transformation in the earth, and becomes an elliptical, reddish-brown, wrinkled pupa, out of which the perfect fly is developed in summer, in from ten to twenty days. The latter broods pass the winter in the pupa state."

The same insect is mentioned in Kirby and Spence's work on Entomology. After learning its history, I observed carefully its habits, and found them to conform precisely to the account of it given by Kollar.

So much for the description of the insect. The next thing, and a very important one, too, is to know what is the best mode of prevention, and what the best mode of destroying after you have found that you have not prevented its attacks. This has not yet been found out. Kollar says it is very difficult to destroy these insects, and Kollar speaks the truth, as all who have tried to do it will abundantly testify.

He recommends the use of powdered charcoal which he says must not be applied to every part of the bed, because it is advisable to sacrifice a portion of the crop rather than lose the whole, by leaving patches free from charcoal, where the parent fly will deposit her eggs, and when hatched the larvæ can easily be removed in the onions left for them to devour, and be buried very deep or burnt.

This process, however, is not very sure. Charcoal ashes, tobacco water, and such like things, have been tried here with but very little success. Unless you happen to hit when the worm is on the outside of the leaf, and before it has burrowed into the stalk, you do not disturb it much, and after he gets in out of the reach of your ashes and tobacco spittle, what cares he how much you "pile on?"

Mr. Burke also says:

"I have also learned from other sources that lime from the dry purifiers of Gas works, and soot, are also very efficient preventives of the ravages of this insect. And recently I have been informed that tar—raw tar sprinkled daily upon the plants, is also an effectual remedy. I was recommended by one of the Shakers of Enfield, to try ashes and lime. I made the application to my beds the present season, and succeeded in saving about one fourth part of the crop."

We should think that raw tar sprinkled upon the plants, could be of no particular service, unless it covered them entirely, and if it did so, it would be as destructive as the worm itself, for no plant could grow encased in a coat of tar. It is probable, if tar is of any use as a preventive, it is owing to its odor being offensive to the fly, and thereby keeping it off the premises. If so, tar in cups, or on chips, placed plentifully among the onions, would be a better way of applying it. We leave the matter for further research and experiment.—*Maine Farmer.*

## IMPROVED SYSTEMS OF TILLAGE.

THERE are certain systems of tillage which for some little time past have been in course of promulgation in England, which are becoming there every day more appreciated, that deserve to be better known in Ireland, where as yet little notice has been taken of them, and the more so from some of them being well fitted to her limited farming capitals, to her smaller holdings, and to her more dense agricultural population, at the same time that they present the still more desirable promise of vastly increasing the produce of her fields—I allude to those of the Reverend Messrs. Huxtable, Wilkins, and Smith, the Hardys, and the Messrs. Mechi, Piper, &c.

It were well that we should become early and intimately acquainted with them, that in the progress (however slow it may be in the most favored conditions, is yet sure) of improvement in that art, on which the well-being of the country rests, we may not be left behind, and so fall into that inevitable ruin which will involve those who in an age of advance choose to stand still.

There are many matters in which, from their demanding large capitals, or unlimited credits, we cannot compete with England, but there are others to which we shall find our smaller capitals equal, and which will as surely conduct to private and public wealth: these claim and ought to seize on our undivided attention, our indefatigable application. While, then, we may find the plans of Mechi, and some others, beyond our reach, those of Smith, and the Hardys, as rather requiring labor than great mechanical expenditure, will be found suitable to our means, and most worthy of our consideration and adoption.

The success of these plans depends very much on one great principle very little understood in Ireland, and but very limitedly followed out in England: it is the continuous exposure of the soil to the disintegrating and commercial actions of the atmospheric air, by mechanically assisting the operations of nature, by repeated movements of it, not only preparatory to, but during the growth of the crops, and for which wide intervals, and consequently thin seeding, in which all the plans agree, are necessary. These plans also all involve deep working.

Although the soil of our fields frequently varies from the substratum of rock on which it reposes, yet what are generally known as soil and subsoil in their natural qualities are usually of a homogeneous character, the difference between them arising from the mechanical actions to which the former has been subjected, and to the matters which have been placed in it as manures, and by which the subsoil has been less affected. We thus find that the soil more abounds, indeed far more so, in humus (a word of recent introduction into the English language) or vegetable remains, and azotised or animal matter, and in organic matters, brought into a soluble state, and therefore accessible to the roots of plants by the conjoined actions of these animal and vegetable matters, and of the air to which our mechanical labors have assisted to render this surface soil pervious. Two things then became obvious, that in loosening

the subsoil we prepare it for these actions which have rendered the surface soil more fertile, and that from its homogeneous character we may generally increase the depth of our active soil without deteriorating it, by either only breaking up the subsoil, by mixing it with the upper soil, or by bringing it up to the top.

The roots of nearly all plants strike much deeper than is generally supposed, Mr. M'Arthur has found that a wheat plant sends its root six feet into the earth. Any one who please to take the trouble may trace them into the subsoil. To this, when it is wet, we may probably attribute the prevalence of the mildew from which our wheat crops have suffered so much of late, and which, it is possible, we formerly escaped by the semi-draining the deep furrows of our potato tillage affected. The breaking up, then, of the subsoil to the greatest depth possible consistent with reasonable expenditure, by making it permeable to our manures, and to the ammonia and carbonic acid floating in the atmosphere, will supply these deep roots with a far greater amount of nutriment than they now find in the subsoil; and as deep working is advantageous, deep draining must be; for when the roots of plants find water in excess they do not go beyond it, but rot. In wet land, deep working then is not beneficial: it becomes necessary first to drain it; as a temporary substitute we ridge it. The action of the air is as necessary to the fermentation of the manure (animal and vegetable) that we place in the ground, as it is to the inorganic components of the soil to ensure a regular and constant supply of nutriment to the roots of plants; and we cannot doubt that the more regular the supply of food is to either animal or vegetable the more healthy and rapid will be its growth. It is by constant mechanical operations alone, on the surface, that we render the soil at all times accessible to the air, for the surface is ever disposed to become crusted by droughts or puddled by water—that is, its pores closed up by the washing into them of the finer particles of the soil—in either case, air is excluded; and whenever this is the case, we should set to work our surface-operating tools whatever they may be. There is no soil, however exhausted, but what will repay the labor. Thus again, these repeated surface stirrings enter into the systems I have referred to.—*Dublin Advocate.*

## A VALUABLE HINT TO FARMERS.

The celebrated Mr. Robert Bakewell, of Dishley, Leicestershire, and the founder of the New Leicestershire sheep, used to tell an anecdote with exceeding high glee of a farmer not only of the olden school, but of the golden times. This farmer, who owned and occupied 1,000 acres of land, had three daughters. When his eldest daughter married, he gave her one quarter of his land for her portion, but no money; and he found, by a little more speed, and a little better management, the produce of his farm did not decrease. When his second daughter married, he gave her one-third of the remaining land for her portion, but no money. He then set to work, and begun to grub up his furze and fern, and ploughed up



what he called his poor dry furze covered in some places nearly half the land. After giving half his land away to two of his daughters, to his great surprise he found that the product increased; he made more money because his new broken up furze land brought excessive crops, and at the same time he farmed the whole of his land better, for he employed three times more laborers upon it; he rose two hours sooner in the morning, had no more dead fallows once in three years; instead of which he got two green crops in one year, and ate them upon the land. A garden never requires a dead fallow. But the great advantage was that he had got the same money to manage 500 acres as he had to manage 1000 acres; therefore he laid out double the money upon the land. When the third and last daughter married, he gave her 250 acres, or half which remained, for her portion, and no money. He then found that he had the same money to farm one quarter of the land as he had at first to farm the whole. He began to ask himself a few questions, and set his wits to work to see how he was to make as much of 250 acres as he had of 1000. He then paid off his bailiff, who weighed twenty stone! rose with the lark in the long days, and went to bed with the lamb; he got twice as much more work done for his money; he made his servants and laborers, and horses, move faster; broke them from their snail's pace; and found that the eye of the master quickened the pace of the servant. He saw the beginning and ending of every thing; and to his servants and laborers, instead of saying "go and do it," he said to them "let us go my boys, and do it." Between come and go he soon found out a great difference. He grubbed up the whole of his furze and ferns, and then ploughed up the whole of his poor grass land, and converted a great deal of corn into meat for sake of the manure, and he preserved his black water [the essence of manure]; cut his hedges down, which had not been plashed for 40 or 50 years; straightened his zig-zag fences; cut his water courses straight, and gained a deal of land by doing so; made dams and sluices, and irrigated all the land he could; he grubbed up many of his hedges and borders covered with bushes, in some places from 10 to 14 yards in width, some more in his small closes, some not wider than streets, and threw three, four, five and six closes into one. He found out that, instead of growing whitethorn hedges and haws to feed foreign birds in the winter, he could grow food for man instead of migratory birds. After all this improvement he grew more and made more of 250 acres than he did from 1000; at the same time he found out that half of England was not cultivated at that time for the want of means to cultivate it with. I let him rams and sold him long-horned bulls, [said Mr. Bakewell] and told him the real value of labor, both in doors and out, and what ought to be done with a certain number of men, oxen, and horses, within a given time. I taught him to sow less and plough better; that there were limits and measures to all things; and that the husbandman ought to be stronger than the farm. I told him how to make hot land colder, and cold land hotter, light land stiffer, and stiff land lighter. I soon caused him to

shake off his old deep-rooted prejudices, and I grafted new ones in their places. I told him not to breed inferior cattle, sheep, or horses, but the best of each kind, for the best consumed no more than the worst. My friend became a new man in his old age.—*Gardener's Chronicle*.

#### THE FATHER OF HUSBANDRY.

If there was one thing more than another to which we thought that the old saw "there is nothing new under the sun" could not be applied, it was decidedly agriculture. The science of chemistry is itself new, it only dates in reality from the days of Cavendish, Priestly, and Black, who studied and discovered in the concluding quarter of last century. Till their day, fire, air, earth and water, were accounted the "four elements;" but they discovered that none of these were elements, and that the air itself was a mixture of several substances: from that epoch chemical analysis dates its commencement. By and by chemistry was applied by Sir Humphrey Davy to agriculture, and it certainly would seem that here at least was something new. So we thought also of that gentleman's mode of cultivation who never applied any manure to his land, but planted and raised luxuriant crop after crop of wheat from land without the application of a particle of any kind of fertiliser, and simply by so managing that half of his wheat fields were lying fallow while the other was under crop. We find, however, that even in agriculture the old proverb holds good, and that there is much truth in the homely text, "nothing new under the sun," *vide* the following account of Jethro Tull's system of horse hoeing husbandry, given lately by Professor Wray at a meeting of the Royal Society of Agriculture:—

"The great principle of Tull was, that the soil and air together contained all that was necessary, without the aid of manure, for the production of luxurious vegetation; but that, in order to render the one and the other available for this end, it was necessary that the soil should be opened up by abundant pulverisation and comminution of its parts. The arguments with which this view was sustained were most forcible and convincing. The better to illustrate his meaning, he had compared the parts of the earth to which the roots of plants attach themselves with the grass or herbage on which animals feed. Thus the fissures through which the roots penetrate, and the internal surface upon which they spread their delicate fibres, constitute, in Tull's language, the 'pasture of plants'—a most happy expression, and one which facilitates in the mind the comprehension of his subsequent reasonings. So then, as an animal will grow and fatten in proportion to the suitability in quality and sufficiency in quantity of the food to which it has access, in the same manner the rapidity of growth and the luxuriance of a plant will depend upon the nature and abundance of the 'pasture' provided for it in the recesses of the soil. But the pasture of plants differs from that of animals in this important respect—that whilst in the latter case the quantity can only be increased by taking in more surface,

the pasture of plants may be indefinitely extended and renewed by the pulverisation of the soil, which is constantly exposing new surfaces to the roots. Nothing can be more true, as Tull says, than that for all practical purposes the soil is infinitely divisible; and that, since the roots of the plants cannot by possibility occupy every interstice which may exist in a highly comminuted soil, each additional stirring is tantamount to the production of a new internal surface, and a fresh source of food. Then he argues that constant comminution and opening of the soil not only enables the roots of plants to benefit by the stores of food already existing in the soil, but that it at the same time materially increases that stock by letting in the atmosphere loaded with invigorating and healthful supplies. Acting upon these principles, Tull had introduced a system of cultivation of crops planted in rows by the drill, and had earned thereby the gratitude of posterity, which was exhibited in the almost universal adoption of that system. But he had also attempted a method of growing crops which had not been so generally followed. In addition to the provision for stirring the soil between the rows of plants, he had left intervals of varying but very considerable width between every second or third row, which enabled him at all times of the year to carry out his principle of pulverising the soil. These intervals were, in fact, in the position of a raked fallow for the year, and were, in the succeeding season, in their turn brought under a crop."

#### THE ORIGIN OF SOME AGRICULTURAL INVENTIONS.

A Devonshire farmer invents a modification of the rotary churn, in which, by making it revolve in an outer casing of warm water, tempered by the aid of the thermometer, he can at all seasons of the year command the best degree of warmth for separating the butter, and thus finish the process in a time at once brief and uniform. The French minister sees this at the Society of Arts, and incloses a description of it to Paris. A model is made, somewhat altered, and exhibited at the "Exposition." A Scotch director of the Highland Society has a copy made of it, carries it over to Edinburgh, where the scientific principles of its construction are highly lauded, and for the next six months all the Ayrshire amateurs are treating their friends to butter made in ten minutes, and amusing them with the wonders of the *French* churn. A Yorkshire smith, living in the midst of heavy land, fixes harrow-teeth into a long cylindrical axle at uniform distances, and fitting two of these axles together, so that the teeth of one shall play between those of the other when it is dragged along the land, forms a machine admirably adapted for the tearing of heavy brittle clods asunder. It is known to few, and attracts little notice at home; but it gets to Norway. Seen there by an Englishman, it is pronounced, as it is, a thing of first-rate excellence, and under the name of the Norwegian harrow it obtains a distinguished place in our future agricultural shows. A Scotch Presbyterian minister puts together, in 1825, an adjustment of wheels

and scissor-blades so working that, when pushed along the corn field, at harvest time, it cuts down the grain as if by hand, and far more cheaply and expeditiously. His brother, a farmer, improves upon and adopts this machine, and for a dozen successive years employs it in reaping his crops. But it, also, is seen by few. The National Society gives the inventor a prize of £50, but makes little noise about it. Nobody cares to make a fortune by pushing it, and although, in 1834, several were in operation in Forfarshire, few of the supposed wide-awake Scotch farmers thought of adopting it as a saving of labour, even when the hardest times had come. But four of the machines were sent to New York from Dundee, the chief place of manufacture. Thoughtful, pushing, emigrants, settlers in the North American prairies, where wide flat fields easily covered with waving corn offered speedy fortunes to those who could command hands to reap it, saw, or heard, or read of these machines. The reaper was re-constructed, modified in different ways, as so complicated a machine could not fail to be, and probably for the better, by ingenious mechanics, was brought into successful operation, made by thousands for the farmers beyond the American lakes, and obtained a deservedly high reputation, as a means both of doing work well and of saving labour much. In 1849, we saw it at the great State Show in Western New York; and brought thence to London in 1851, the *American* reaping machine proved the main attraction of the United States' department of the Great Exhibition. Implement makers vied with each other in seeking to secure the privilege of manufacturing the patented machines for the English market; thousands of practical men became persuaded of its economical applicability to our English soil and crops; hundreds of machines were bespoken by English cultivators, and all the while no one knew that the original model machine was at the very time quietly cutting its yearly harvest on the farm of Inch Michael, in the Carse of Gowrie.—*Edinburgh Review*.

#### HORTICULTURE.

##### ON REARING COMMON FRUITS.

All fruits, in such quantities at least as can be produced in small gardens, may be considered more as luxuries than as affording much nutritional food; but most of them, when ripe, and still more when cooked in pies, puddings, tarts, jams, jellies, and other preserves, are wholesome, and form a pleasant variety at the tables even of the humblest cottager.

It will not be profitable in a small garden to have many fruit trees, even of the smaller kinds, as they tend so much to injure the more important crops by shading them from the light. We shall therefore give only such directions here as appear to be suitable for cottage gardens, beginning with the smaller sorts.

##### STRAWBERRIES.

Strawberries contain a little sugar, a good deal of pulpy fibre, and a mild agreeable acid,



and are exceedingly wholesome, being one of the few fruits which almost any one may eat with impunity, and ripening at a healthy season of the year.

The soil best adapted for them is a strong rich loam, and one that is tolerably adhesive, and retentive of moisture; for, as strawberries are generally injured in this country by excessive drought, it is best to provide against this calamity by planting them in a rather wet soil. A rich soil, however, is not indispensable, as almost any mould that is not too dry, will produce a greater or less quantity of fruit.

Trenching the ground a foot and a half deep, and mixing plenty of well-rotted dung with the soil that is brought to the surface, is the best preparation.

The time of planting is the first week in August for the offsets of the first spring runners, always choosing those that are large, and rejecting small ones. During the first year cut off all runners as they appear. Any time from October to May will do planting out old stools which have borne fruit once. Those which have borne twice are good for nothing, and should be thrown away.

The offsets may be planted in a single row along the borders of the walks, at ten or fifteen inches apart; if another row be made, it ought to be fifteen inches from the other. They may also be planted in clumps of three or more together, six inches or less apart, and three feet between the clumps. Beds with four rows each and two feet between the beds for cabbages, answer well. But the best situation for planting strawberries is, where a row of dwarf apple, pear, or other trees, is grown on either or both sides of a walk, to have a bed of strawberries, four or five feet wide beneath them; for in this situation they will be afforded that degree of shade which is necessary for them in dry weather, without injuring the trees or being injured by them. In these beds they should first be planted in four rows, two on each side of the trees, and the offsets from these should be allowed to spread so as to extend themselves over the whole of the bed, only cutting off annually those that are disposed to wander from the prescribed bounds of the bed. A strawberry-bed of this description would produce a far greater crop than if planted out in single rows, and will continue bearing for a greater number of years, as well as be less liable to injury from drought.

It is important to fix the roots well in the ground otherwise they may be drawn out by earthworms or pushed out of the ground on a thaw succeeding a hard frost.

The best sort is Keen's seedling, and next to that the old pine, Wilmot's superb, the Roseberry, and the Hautbois, or Hoboy; the scarlet is the earliest; and the small red Alpine strawberry, which some say is best when raised from seed, others say best from runners, planted in August or September, at six inches distance, will produce fruit from the end of May till the frost sets in. For a late crop all the flower-stems should be cut off as they show, up to the end of June. The Alpine is not the wild or wood strawberry,

as is commonly supposed. The Elton, the British Queen, and the Prince Albert, are also very good sorts, the two latter being particularly large.

Strawberries are very much injured by hot, dry weather, and therefore they must be abundantly supplied with water when this occurs, particularly just as the blossom falls; but the blossom must not be wetted. Weeds must be cleared off, but in stirring the earth with a fork, not with a spade, care must be taken not to go too near the roots, as recommended by some.—Birds must be guarded against, as well as snails and slugs, which would eat the blooms and spoil the fruit. Pieces of slate, tiles, tin, boards, or what is preferable, hay, straw, or dry moss, should be laid three or four inches thick under the fruit as it becomes ripe, to keep it clean from sand; but this precaution is seldom necessary. The superfluous runners and dead leaves should be removed in either February or March. It is a bad plan to cut off the leaves in autumn.—What are termed male or barren plants, should always be grubbed up.

Very large strawberries are obtained by placing the plants singly, two feet apart, or in groups of three, the same distance between the groups, and keeping the runners cut off, and removing some of the blooms. Strawberries succeed better if removed or re-planted every three years, and they should have a dressing of fresh soil and decayed manure each spring. On ground that slopes to the south, or raised banks, they will ripen earlier. And it is a good plan to plant them on small banks, covered with flat bricks, leaving openings for the plants, as they ripen, sooner, and are kept cleaner by this method.

#### RASPBERRIES.

This is perhaps superior in flavour to the strawberry, though not on the whole so palatable; but it is nevertheless good and very wholesome.

It will grow in almost any soil, but requires rich earth and good manure to make it bear well and the ground must be well and deeply dug or trenched before planting. The best time for planting is October, and though many individuals recommend February or March, we have more than once spoiled a crop by following their advice.

From three to five off-sets or suckers may be planted in a clump, taking care not to let the roots dry in the sun before planting, and the clumps should be from four to six feet asunder; or in rows, east and west, four feet apart.

If fruit be not wanted the first year, it will assist in the formation of stronger and finer young suckers to cut the plants down within six inches of the ground.

The best sorts are the Antwerp red or yellow the next cane; but the sort which bears twice in the season is the most prolific. The wild sort is good for nothing.

As strawberry plants bear but two years, raspberries bear only one year. The stems which are done bearing should therefore be cleared away and kept for flower-sticks, and also the weaker young shoots, leaving about five of the

strongest young stems, shortened to four or five feet, in a clump, to bear next season. They should be slightly bent towards the centre, and tied with a small twig of willow round a stake, to prevent their being broken by the wind: they require moving into fresh soil every four years on account of exhausting the ground.

#### GOOSEBERRIES.

This excellent fruit contains when ripe a good deal of sugar and pulpy fibre, flavoured with the malic acid. It is very wholesome and not unprofitable.

The gooseberry will grow on the poorest soil, even on the top of an old wall; but for producing good crops, requires a rich deep soil, well and deeply dug, or trenched and manured before planting.

The best time for planting cuttings or slips is October; but they will succeed if planted at any time between this and March, though those planted in October or November will produce the best plants, and will not be so liable to fail.

The cuttings must be made from the shoots of medium size, (not the root-suckers of the same year) about a foot or more in length, cutting off the top, and all the buds, but four, and making two or three shallow notches in the bark at the root end, to cause root fibres to sprout. The cutting should invariably be slipped from the tree, for, as has been previously observed, they will be more likely to form roots when thus treated. When longer cuttings cannot be procured, six or even three inches, leaving only one or two buds, will be sufficient.

As old trees do not look nor bear so well as young ones, a few cuttings ought to be struck every year, to replace decayed or inferior stocks. The sorts are almost innumerable, and the Lancashire ones in particular, with drooping branches are in general very large, such as Farmer's roaring-lion; but the smallest sorts, particularly the rough red, the smooth black, and the early green are far superior in flavour. The champagne grows erect.

The cuttings may at first be planted a few inches apart, and after they are rooted, may be transplanted into a rich nursery bed, in rows two feet apart, and half that distance between the plants, taking care to prune off all suckers and shoots on the lower part of the stem, and leaving four shoots, cut back to six inches.

In the second year they may be finally planted out at six feet apart, cutting out all superfluous shoots, and leaving only two on each of the four leading ones, heading these down to six inches. There will now be eight shoots to form a head; but future prunings must be conducted in a very different manner. After the tree is well formed and has the requisite quantity of branches, the practice of shortening the principal shoots is not only unnecessary, but is extremely injudicious, except with such as are growing too vigorously or are inclining downwards, or point towards the centre of the tree. In all other cases, the leading shoots should never be stopped, for every cultivator knows that gooseberry trees have a

great tendency to produce young and useless shoots, and of course anything which promotes or increases that tendency, proves injurious to the tree, and prevents it from being so well as it otherwise would. In cutting out the superfluous shoots, they should invariably be taken off as closely as possible to the old ones, or may even be slipped out, if this operation is performed carefully, for the numerous buds which are placed at the bottom of each shoot will only produce more shoots if left.

Gooseberries are apt to be injured by the caterpillars of a saw-fly, which lays its eggs in rows along the under ribs of the leaves, and the caterpillars after devouring the leaves, go into the ground where they live in pupa state till the following season. The most effectual remedy, is carefully looking over the bushes once a week, to watch the hatching of the eggs, when the leaves infected may be picked off. Liquid manure from the stable or the privy, poured about the roots, is said to kill the pupæ in winter, and at all events will do some good as manure if it do not kill them.

The trees may be trained in the form of a fan, or of an espalier hedge, if desired, or in single stems with spurs only and no branches, to long stakes; or, what is more usual, somewhat in the form of a funnel, by cutting out the centre branches to admit light. When the fruit is to be gathered green, the thicker the bush and the fruit the better; but when it is intended for ripening, the centre of the bush should always be left open to admit light and air.

In the same way, by means of stakes to tie the shoots to, trees may be trained in form of a funnel or of a fan; but none of these modes of training are equal to that of allowing the tree to form a uniform and compact bush, nor will so much fruit be produced by any other method as by that last mentioned. It will be important to dig around the trees, and point in occasionally some well rotted manure.

When the trees are old, the new shoots will be very short, and when the fruit spurs have borne for two or three years, they ought to be thinned out. For prize gooseberries, only one berry on a shoot is left to ripen.

#### BLACK CURRANTS.

Black currants are chiefly used for making jelly—useful in cases of sore throat, and also as a wholesome luxury.

The cultivation is precisely the same as that of the gooseberry, except that black currant trees require less pruning, as they do not produce such an abundance of young shoots. All dead or unproductive wood should be cut out every winter, and the shoots thinned, so as not to crowd each other, and to admit light, but very rarely shortened.

The trees grow high and straggling, and, from requiring much room, are not very convenient in small gardens, except in out corners, or trained to walls or palings; but even in this case they are not very profitable. The Naples sort is by far the best for produce and flavor. Black cur-



rant trees are extremely liable to be infested with aphides, and if the leaves on which they appear are not sprinkled with tobacco water, they will entirely strip the trees of their leaves, and do great injury.

RED AND WHITE CURRANTS.

These fruits, particularly the red, contain less sugar and more malic acid than gooseberries; but, with a little sugar added, are palatable and wholesome, either cooked or uncooked.

The white Dutch, with yellowish fruit, and the white crystal, are the best. The red, though smaller, is productive and profitable.

Red and white currant trees must be pruned in a very different manner to that recommended for gooseberries, and after they have produced the required number of branches, so as to form a uniform bush, the greater part of the young shoots must be annually taken off, leaving only the leading ones, and such as are desired to make new branches, and shortening these to four or six inches according to their strength, always cutting them off just above a bud that points outwards; for if this latter particular is not attended to, the points of the shoots will decay down to the bud, and have a very unsightly appearance, or the new shoots will grow inwards, and crowd up the centre of the plant. In pruning off the superfluous lateral shoots, they should not be cut off close to the old wood, but a short spur of about a quarter or half an inch in length should be left to each, as these spurs generally produce an abundance of fruit. It is always important to cut out old mossy wood, to have all the shoots open to the light, or to thin out the spurs when old or crowded.

In managing the cuttings, proceed as directed for gooseberries, except that they must not be slipped off, planting out in the second year when the plants have eight inches of stem, and about five leading shoots. Both these and black currants are greatly injured by having the flower-buds eaten off by sparrows, bull-finches, and other small birds, which must be carefully scared away. Much harm is also done by aphides and the leaf-rolling caterpillars of small moths. The best remedy is timely picking off the infected leaves, if it has been neglected in winter to scrape off the little grey patches of eggs, which are glued to the bark of the stem and branches. Whole branches are sometimes killed by the caterpillar of a moth eating into the wood.

**THE SOAP PLANT.**—The soap-plant, so called, grows all over California, on high hills as well as in the valleys. The leaves make their appearance about the middle of November, or about six weeks after the rainy season has fairly set in; the plants never grow more than one foot high, and the leaves and stalk drop entirely off in May, though the bulbs remain in the ground all the summer without decaying. It is used to wash with in all parts of the country, and by those who know its virtues it is preferred to the best of soap. The method of using it is merely to strip off the husk, dip the clothes in water, and rub the bulb on them; it makes a thick lather, and smells not unlike new brown soap. The botanical name of the plant is *Phalengium pomaridianum*. Besides this plant, the bark of a tree, *Chelaria saponaria*, is also used in

South America for the purposes of washing. Several other plants have been used in various countries as a substitute for soap. All of these contain considerable quantities of oleaginous and alkaline principles in their composition, on which their value depends.—*Hogg's Instructor*.

MISCELLANY.

THE PHILOSOPHY OF COOKERY.

FROM MRS. HALE'S NEW COOK BOOK.

*Concluded from our last.*

At first sight, few things seem less alike than starch and sugar, but modern discovery has proved that our saliva—the natural moisture of the mouth (which in its froth, as it is swallowed with every mouthful of food, always contains air) has power, when mixed with moistened starch at the heat of the stomach, to turn the starch into sugar; and again we find that butter and fat contain the same ingredients as starch and sugar, but with this difference, that ten ounces of fat will feed as much oxygen as twenty-four ounces of starch. Grains, vegetables, milk, and meats differ from each other, and among themselves in their quantities of flesh-producing and oxygen-feeding substances; but whether the oxygen feeders be in the form of sugar or fat, we can tell exactly how much starch they amount to, and the following list taken from Baron Leibig's familiar letters on chemistry, in this shows the relative value of the several kinds of food in flesh-producing, and oxygen-feeding, or warmth-giving ingredients.

	Flesh producing.	Warmth giving.
Human milk has for every ten flesh-producing parts.....	10	40
Cows' milk.....	10	30
Lentils.....	10	21
Horse beans.....	10	22
Peas.....	10	23
Fat mutton.....	10	27
Fat Pork.....	10	30
Beef.....	10	17
Hare.....	10	2
Veal.....	10	1
Wheat flour.....	10	46
Oatmeal.....	10	50
Rye flour.....	10	57
Barley.....	10	57
White potatoes.....	10	86
Black potatoes.....	10	115
Rice.....	10	123
Buckwheat.....	10	130

Here, then, we have proof of the value of variety in food, and come upon what may be called the Philosophy of Cookery.\* In our food the proportions of human milk are the best we can aim at; it has enough of flesh-producing ingredients to restore our daily waste, and enough of warmth-

\* Some determined advocates of the vegetable system maintain, that the teeth and stomach of the monkey correspond, in structure, very closely with that of man, yet it lives on fruits—therefore, if man followed nature, he would live on fruits and vegetables. But though the anatomical likeness between man and monkeys is striking, yet it is not complete; the difference may be and doubtless is precisely that which makes a difference of diet necessary to nourish and develop their dissimilar natures. Those who should live as the monkeys do would most closely resemble them.

giving to feed the oxygen we breathe. To begin with the earliest making of dishes, we find that cows' milk has less of oxygen-feeding ingredients in a given measure than human milk; a child, would, therefore, grow thin upon it unless a little sugar were added; wheat flour has, on the other hand, so much an access of oxygen-feeding power as would fatten a child unhealthy, and it should therefore have cows' milk added to reduce the fattening power.

The same sort of procedure applies in greater or less degree to all dishes. Veal and hare stand lowest in the list for their oxygen-feeding qualities, and, on this account, should be eaten with potatoes or rice, which stand highest, and with bacon and jelly, which furnish in their fat and sugar the carbon wanting in the flesh. With the above table before us, and keeping in mind the facts already detailed, it is clear that cookery should supply us with a mixed diet of animal and vegetable food, and should aim so to mix as to give us for every ounce of the flesh-making ingredients in our food, four ounces of oxygen-feeding ingredients. It is clear, also, that the most nourishing or strength-giving of all foods are red fresh meats. They are flesh ready made, and contain, besides, the iron which gives its red color to the blood, being short of which the blood lacks vitality, and wanting which it dies.

To preserve in dressing the full nourishment of meats, and their properties of digestiveness, forms a most important part of the art of cooking; for these ends the object to be kept in mind is to retain as much as possible the juices of the meat, whether roast or boiled. This, in the case of boiling meat is best done by placing it at once in briskly boiling water; the albumen on the surface and to some depth, is immediately coagulated, and thus forms a kind of covering which neither allows the water to get into the meat, nor the meat juice into the water. The water should then be kept just under boiling until the meat be thoroughly done, which it will be when every part has been heated to about 165 degrees, the temperature at which the coloring matter of the blood coagulates or fixes; at 133 degrees the albumen sets, but the blood does not, and therefore the meat is red and raw.

The same rules apply to roasting; the meats should first be brought near enough a bright fire to brown the outside, and then should be allowed to roast slowly.

Belonging to this question of waste and nourishment it is to be noted, that the almost everywhere-agreed-upon notion that soup, which sets into a strong jelly, must be the most nutritious, is altogether a mistake. The soup sets because it contains the gelatine of glue of the sinews, flesh, and bones; but on this imagined richness alone it has, by recent experiments, been proved that no animal can live. The jelly of bones boiled into soup, can furnish only jelly for our bones; the jelly of sinew or calf's feet can form only sinew; neither flesh nor its juices set into a jelly. It is only by long boiling we obtain a soup that sets, but in much less time we get all the nourishing properties that meat yields in soups which are no doubt useful in cases of recovery from illness, when the portions of the system in which

if digested, jelly is unwholesome, for it loads the blood with not only useless, but disturbing products. Nor does jelly stand alone. Neither can we live on meat which has been cleared of fat, long boiled, and has had all the juice pressed out of it; a dog so fed, lost in forty-three days a fourth of his weight; in fifty days he bore all the appearance of starvation, and yet such meat has all the muscular fibre in it. In the same way, animals fed on pure casein, albumen, fibrin of vegetables, starch, sugar, or fat, died, with every appearance of death by hunger.

Further experiments showed that these worse than useless foods were entirely without certain matters which are always to be found in the blood, namely, phosphoric acid, potash, soda, lime, magnesia, oxide of iron, and common salt (in certain of these we may mention, by difficulty of digestion and poor nutriment qualities.) These salts of the blood, as they are termed in chemistry, are to be found in the several wheys and juices of meat, milk, pulse, and grain. Here then was the proof complete, that such food, to support life, must contain the several ingredients of the blood, and that the stomach cannot make, nor the body do without the least of them.

It is an established truth in physiology, that man is omnivorous—that is, constituted to eat almost every kind of food, which, separately, nourishes other animals. His teeth are formed to masticate and his stomach to digest flesh, fish, and all farinaceous and vegetable substances—he can eat and digest these even in a raw state; but it is necessary to perfect them for his nourishment in the most healthy manner, that they be prepared by cooking—that is, softened by the action and fire of water.

In strict accordance with this philosophy, which makes a portion of animal food necessary to develop and sustain the human constitution in its most perfect state of physical, intellectual and moral strength and beauty, we know that now in every country where a mixed diet is habitually used, as in the temperate climates, there the greatest improvement of the race is to be found, and the greatest energy of character. It is that portion of the human family who have the means of obtaining this food at least once a day who now hold dominion over the earth. Forty thousand of the beef-fed British govern and control ninety millions of the rice-eating natives of India.

In every nation on earth the *rulers*, the men of power, whether princes or priests, almost invariably use a portion of the animal food. The people are often compelled, either from poverty or policy, to abstain. Whenever the time shall arrive that every *peasant* in Europe is able to "put his pullet in the pot of a Sunday," a great improvement will have taken place in his character and condition; when he can have a portion of animal food, properly cooked, once each day, he will soon become a *man*.

In our own country, the beneficial effects of a generous diet, in developing and sustaining the energies of a whole nation, are clearly evident. The severe and unremitting labors of every kind which were requisite to subdue and obtain dominion of a wilderness world could not have been



done by a half-starved, suffering people. A larger quantity and better quality of food are necessary here than would have supplied men in the old countries, where less action of body and mind are permitted.

Still, there is great danger of excess in all indulgences of the appetite; even when a present benefit may be obtained, this danger should never be forgotten. The tendency in our country has been to excess in animal food. The advocates of the vegetable diet system had good cause for denouncing this excess, and the indiscriminate use of flesh. It was, and now is, frequently given to young children—infants before they have teeth—a sin against nature, which often costs the life of the poor little sufferer; it is eaten too freely by the sedentary and delicate; and to make it worse still, it is eaten, often in a half-cooked state, and swallowed without sufficient chewing. All these things are wrong, and ought to be reformed.

It is generally admitted that the French excel in the economy of their cooking. By studying the appropriate flavours for every dish, they contrive to dress all the broken pieces of meats, and make a variety of dishes from vegetables at a small expense.

Next to the knowledge of the differences in the human constitution, and the nature of the food proper for man, this study of flavors and art of re-cooking to advantage is to be prized by the good housekeeper. Every family who has a garden spot should cultivate those vegetables and herbs which are requisite for seasoning—horseradish, onions, celery, mustard, capsicum, (red-pepper), sage, summer-savory, mint, &c., &c., are easily raised. These, if rightly prepared, will be sufficient for all common culinary purposes, and a little care and study will enable the housekeeper to flavor her meats, gravies, and vegetables in the best manner.

Bear in mind that in preparing food, three things are to be united, the promotion of health, the study of economy, and the gratification of taste.

#### BOOK NOTICE.

A CYCLOPEDIA OF AGRICULTURE; PRACTICAL AND SCIENTIFIC. PARTS 16, 17, 18. GLASGOW, BLACKIE & SON; TORONTO; THOS. MACLEAR.

The high estimate we formed of this work at its commencement, is fully sustained by the later numbers. As an exposition of the present condition of British Agriculture, and of the scientific principles on which all sound and profitable practice must be based, it is certainly without a rival in the English, or perhaps any other language. The following remarks are taken from a useful article in the 18th part, on

#### MANURE.

We shall now proceed with the object of the present, namely, the management of farm-yard manure, and also such other manures as call the farmer's art and skill into requisition; Farm yard manure, properly speaking, is the residual produce of all vegetable substances employed in the feeding and littering of the various kinds of live stock kept within the

precincts of a farm steading. Along with this may be included all kinds of manure made by horses, cows, and pigs, in towns and villages. Farm yard manure, therefore, contains all the elements or substances of the food and litter consumed by live stock, except those which are converted into flesh, bones, milk, &c. The quantity and quality of manure so made vary according to the mode pursued in consuming the food and litter. If much fodder and litter be used, and a small amount of green food consumed as in the case of wintering young stock, the manure will be large in quantity, but inferior in quality. If both straw and grain food be abundantly supplied, the manure will be both bulky and of good quality. If, however, we add to plenty of straw and green food, a large amount of corn or cake, the quality of the manure is so greatly improved as to be considered by some more than equivalent for any loss sustained from feeding with so expensive food. Again the circumstances under which the food and litter are consumed very materially affect the quality of the manure. Thus, if consumed in open courts, the manure necessarily contains a large quantity of rainwater, which, if not absorbed by a corresponding supply of dry litter, must pass through and away from it, thus dissolving out much soluble matter, and, as a matter of course, greatly deteriorating the quality of the manure. No doubt this liquid may be collected in tanks and preserved from loss; still it is much oftener allowed to run to waste, while the solid manure is so greatly diminished in quality, that a much greater quantity is required to produce results equal to those obtained from manure made under cover. The most perfect mode of making manure is that practised by Mr. Mechi, of Tiptree-hall. The whole of his cattle, sheep, and pigs are kept under cover, on sparred wooden flooring, which permits their droppings to fall through the openings into cellars or chambers beneath. In order to accomplish this the more effectually; the straw is all cut up into short lengths, saturated with liquid oil-cake, and linseed, and ground corn, and in this way used solely as food, no bedding being required. This system has been assailed by a host of writers, in no measured terms, as preposterous in every point of view, as expensive in its working and unsatisfactory in its results, and contrary to the nature of animals so fed. These points, of course, must be decided not by theory, but prolonged experience; and probably, it would be better to delay judgement in such matters until personal experience, or the experience of trustworthy and competent practical men, has furnished sufficient data to argue the matter fairly. With regard to that point, which lies in the way of this article—namely, the value of manure made by Mr. Mechi's plan—it appears to the writer a self-evident proposition, that the manure so obtained must, from the absence of anything like active fermentation, be superior to all other kinds derived from the ordinary modes pursued, just in proportion to the loss sustained by fermentation by one or other of these. The presence of ammonia, in greater or smaller quantities, is now recognised as a tolerably accurate test of its value, so that any mode which is most effectual in preventing its escape is to be considered the best.

Manure made from the board and box-feeding systems, although very different in mechanical condition is yet so far similar in construction in this respect, that the ammonia is prevented from escaping. In the former it is in a latent and non-volatile state, while in the latter, although in a more developed condition, yet the treading to which the manure is subjected the mechanical effect of retaining it in the manure.

"Board" manure is in the form of a thick poultice-like mass, without much smell; while box-manure is

usually rank, unctuous, and bulky when turned over, emitting a highly disagreeable odour. These different conditions have a considerable influence in determining the value of such manures in a practical point of view.

*Management of Manure.*—This may be said without exaggeration to be the most important department of farm practice, and unfortunately one of which there is greater need of improvement than in any other. Notwithstanding the fact that the proper management of the manure heap has been explained and enforced by the teachings of agricultural chemistry year after year for the last ten years, the practical application to the lessons remains still in a great measure to be made. Farm-yard manure, as heretofore, continues to be carted out from rain-soaked straw-beds to the distant fields, and there deposited in large, ill-formed heaps; exposed to rain, wind, and sun for weeks and months, without even an attempt being made to keep the crows from scattering it about in their search for food. Many farmers, whose practice otherwise is unassailable, are yet strangely blinded to the great loss sustained by exposed manure heaps. On the great majority of farms, even in the best-farmed districts, there is a fearful waste of food-producing material. Badly constructed homesteads have, no doubt, greatly contributed to this state of things, and it is very seldom, even yet, that any provision is made, in the construction of new ones, for the preservation of liquid manure, or for protecting the straw-yard from being deluged every now and then by rain poured into it from the surrounding roofs. The very fact that about thirty inches of rain fall annually over Great Britain and Ireland, ought to have suggested the idea that an open straw-yard must of necessity receive its proportionate share; which however, is too often doubled by the rain poured down from a large surface of unspouted roofs.

It is to be hoped that landlords may soon see it to be for their own advantage, as well as their tenants, to make abundant provision for the complete preservation and protection of manure when constructing new steadings or repairing old ones. A loss of manure is equivalent to a diminution of produce, and this again, by lowering the profits of farming, necessarily depreciates the value of land. All manures should be made under cover, either in stalls, boxes, or sheds; if in the former, it must be removed daily so that a covered shed will be necessary for its protection; if in the second, it may be allowed to accumulate for two or three months; and by the latter mode, it may remain until required for laying on the land, provided the height of the roof will admit of its being so accumulated. How is it that we invariably find box-feeding or house-feeding of some kind or other always accompanied by bulky crops of corn, roots, and clover?—just because the manure so made is richer and more abundant than on those farms where the horse-pond receives the draining of the courts and byres. We need only point to what has been already said in regard to the quantity of urine voided by different animals, to prove that if there be no tank to receive the drainings of stall fed animals, the loss sustained will amount to one-third the weight of the whole dung, or twice that of the liquid part. Neither is the matter mended by allowing the urine to run into the straw-yard, because it is generally sufficiently saturated without the addition of more liquid, and hence room can only be made by the surplus finding its way out into that neverfailing receptacle, the horse-pond, or the nearest open ditch. Few who have not studied this subject are aware of the enormous quantity of fertilizing materials that accompanies the little black stream that oozes from a straw-yard where there is no tank to drain off the surplus liquid. Its apparent insignificance is its greatest bane; for were it more abundant and more offensive, it would more readily attract

attention, and necessitate the adoption of active measures for its removal. We have endeavoured to show in a general way how much manure may be made on a farm annually, but of course the calculations are based upon the supposition that nothing is lost. Were we to take the case of a stall-fed cow, voiding only 60lbs. of urine per day, one-third of which is retained by the latter, and were no provision made for collecting the surplus, the loss in twelve months would amount to 40 x 365 = 6 tons 12 cwt. and 16 lbs., or 1,480 gallons, every 5½ gallons of which contain nearly 1lb. of ammonia. The loss from ammonia alone, calculating this substance at 6d. per lb., its recognised value in agriculture, would be 262lbs. at 6d.—£16 11s., which would purchase 24cwt. of guano.

Assumed numbers are ever open to be distrusted; but in this case, whether the quantites be right or wrong, the fact that the urine of the cattle and horses is a very valuable substance, is proved beyond all doubt by the test of experience, and consequently the loss sustained by allowing it to run away, will just be in proportion to the quantity so wasted.

In ordinary farm practice the manure from the stables and byres is all wheeled into the straw-yard, to be trodden down by young stock; and so far there can be no objection to its being so disposed of, as young cattle thrive remarkably well upon the refuse fodder of the stable, even preferring it to clean fodder; but the advantage of this practice would be greatly enhanced, if the straw-yard were completely roofed over, to protect both cattle and manure from rain. The expense of so doing would be repaid in a few years by the superior condition of the young stock and the improvement of the manure. Although it is the landlord's duty, and would be his interest ultimately to bear this expense, yet in the case of current leases he is not bound by any obligation to incur the expense without an equivalent; but rather than the improvement should not be effected, it would, in every case where the lease is not more than half run, be a profitable investment for the tenant to pay 5 per cent. on the outlay required, and few landlords, we think, would be justified in refusing to furnish the necessary funds.

The system of feeding in boxes, notwithstanding the opposition it has experienced, is steadily extending in England, and not a few farmers in Scotland have adopted it. One great error generally committed in the erection of boxes is that of allowing too little space for the animal to move about in. If smaller than 90 square feet of area, considerable difficulty will be experienced in keeping it sufficiently dry, unless at the expense of a large quantity of litter frequently applied. This is a serious objection to small boxes, and besides there is too much disturbance to the occupant.

The best litter for the box-fed cattle is wheat straw cut into three or four inch lengths. The practice of using cut straw in box-feeding is recommended by the fact that the manure thus made requires no turning or other preparation before being applied to the soil. The same reasoning holds good also in stall-feeding, and it will be found that the same weight of cut straw will keep the cattle cleaner than whole straw, because it is easily turned over by the slightest motion of their feet, and continually presenting dry surfaces until thoroughly saturated; whereas whole straw becomes consolidated when trodden or laid upon, and requires to be frequently shaken up and renewed in order to afford a dry lair. In stall-feeding the use of the grooved brick pavement will be found greatly to economise litter, while at the same time the cattle are very much more comfortable, as the urine passes away by the grooves into the gutters almost as soon as voided. While on this subject, we may remark that heifers feed fully as well in stalls as in boxes,



risk of being lost, as the soil, according to Mr. Way's experiments, has both a physical and chemical power of retaining ammonia, while, at the same time, it yields up readily to the growing plants.

The wasteful practice of spreading manure on the surface of the soil, and allowing it to lie bleaching for weeks, and even months, before being ploughed in, is still carried on in some counties of England, and stoutly defended by hosts of clay-land farmers. If the perpetrators of such an enormity be right, science is at fault, analysis is a delusion, and ammonia and all its kindred a family of impostors. The practice in Syria of making the dung of animals into cakes, and sticking these upon the walls of their houses to dry in the sun preparatory to their ultimate destination as being burnt for fuel, is not much more wasteful than spreading out farm-yard manure to the winds, rains, and sun, for months together. A farmer who imports his ammonia from the China islands, and dissipates to the four winds of heaven that furnished by his own farm, is nearly as wasteful as he would be were he to give away his straw for nothing, and to purchase from others what he required for his own use.

*The Spreading of Manure.*—This operation is neither performed broadcast or in drills. The former method is generally adopted in manuring lands for corn crops, or in winter manuring for spring green crops; and the latter mode is almost universal in the cultivation of root crops of all kinds. When to be spread broad-coast, the manure is laid down in parallel heaps every five and a half or six yards—each heap, when spread, occupying a space equal to the square of these numbers; and as these numbers are respectively the root of an English square perch and a Scotch rood, the number of heaps to an acre, will, in both cases, be 160; and this sum, divided by any number of cartloads, will give the number of heaps to be drawn from each cart. Thus, if it be wished to lay on manure at the rate of 16 cart-loads per acre, the number of heaps will be  $160 \div 16 = 10$  heaps per cart-load. If each cart-load contain 15 cwt. of manure, then each heap will be  $1\frac{1}{2}$  cwt., which multiplied by 160 = 12 tons per acre. Broadcast manure should be spread and broken down as evenly as possible, and to effect this, three people should work at two rows of heaps; that is, two throwing out the manure equally over the surface, and the third breaking the lumps and covering all blank spaces. The dung should be ploughed in as quickly as possible, and if long and rank, a boy or woman should go behind each plough to draw it into the open furrow. The expense will not exceed 8d. per acre, and it is well repaid by the more perfect covering of the manure—besides rendering it less liable to be dragged out by the harrows, if a corn crop is to follow.

The most convenient mode of applying manure in drills, is to make each cart-load proceed along every three drills, and to pull it out without stopping the horse. If, however, a large dose of manure is given, or if it be short, it is better to stop the horse every five or six yards, and lay it down in small heaps; as no man, however active, can draw a great quantity of short manure evenly out when the horse goes on without stopping.

This plan of laying down the manure in the drills does not answer well on hilly ground, because whether the cart goes up or down, the raised portions of the drills are sure to be broken down and destroyed. The best plan, therefore, in such cases, is to mark off the field into parallel divisions every five yards with a single plough furrow, lay down the manure as if in broad-casting, and then to have it carried and placed in the drills as fast as they are made.

The expense of doing this does not, in our own neighbourhood, exceed 8d. per acre, and it is a very effective way of carrying on the work.

whereas the reverse is the case with steers, the reason being that with the former the litter is never wetted below the belly, whereas with the latter it is in constant state of saturation; besides a heifer is much quieter when tied by the neck than in a loose-box, for a reason well known to every practical man.

*Manure Heats.*—There being few steadings where the accommodation is sufficient to hold all the manure until wanted for application to the land, it is necessary and particularly convenient to cart it out to the more distant fields, and to make it up in large heaps. Wherever this is necessary, the cart should be driven upon the heap before being emptied. By so doing manure is consolidated, air is excluded, and fermentation prevented. In finishing the heap, the ends should be raised nearly on a level with the centre, which is easily done by a little attention on the part of the carter. These portions unavoidably left low at both ends for the cart to get on and off the heap, can be raised on a level with the rest by backing several cartloads, tilting them up, and throwing up the manure with forks. After this the whole heap should be covered with earth from the sides, three or four inches thick which should be well beaten down with the back of a spade. Road scrapings when they can be got conveniently, are even better than common soil, as they are in very minute state of subdivision from the grinding and treading of cart wheels and horses' feet, besides always containing considerable quantities of manure dropped on the roads. If these are sufficiently wet to beat into a plaster on the heap, so much the better, as the surface will thereby be more hermetically sealed both within and without. In addition to all this, the whole surface may very profitably be sprinkled with sulphuric acid, so that any ammoniacal gas that may escape through the earth may be at once arrested by this useful agricultural detective, whose affinity for fugitive alkalies is altogether insatiable. Dissolved bones, having a sufficiency of free acid, may also be employed for fixing ammonia, and if the manure be intended for turnips or mangold-wurzel, it is an excellent plan to mix a few cwt. through the whole heap.

The site chosen for these manure heaps should be as sheltered as possible, in order to prevent the surface from becoming too dry. An excavated site, built on three sides, with a wall four feet high, is decidedly the best mode of preserving manure in a field; and were every field on a farm which may not be adjacent, and therefore not easily manured from the home-stead, furnished with a pit of this sort, there would be no risk of loss from evaporation or fermentation, provided the top and open side were covered with earth.

Before leaving this subject, we may state that no weeds in which the seeds have ripened, and are still remaining in them should ever be mixed with farm-yard manure, as these seeds are sure to vegetate when placed in the soil again. Couch grass may be so employed, but the stolons take a long time to become completely rotten.

Potato stalks and farm-yard manure make an excellent mixture for raising turnips, and if possible they should either be taken while green to the straw-yard, to be trodden down and mixed with the manure there, or mixed up with manure in the field, and well covered with earth. Turnip tops, if not ploughed in green, should also be treated in the same way. On sharp dry land, where the quality of the grain is generally good, turnip-tops make excellent manure for wheat and barley and this is very generally the mode of using them on hard land farms, but on soft soils they produce a coarse and inferior sample.

*Application of Manure to the Soil.*—The quicker farm-yard manure is buried the better. This is a maxim that holds good everywhere, and under every circumstance; because when once covered up by three or four inches of earth, it is safe from all

## PHENOMENA OF AN AMERICAN AUTUMN.

We take the following article from the February number of our cotemporary, the *Lower Canada Agricultural Journal*, with every word of which in reference to the late lamented Professor Norton, with whom we had the honour of a personal acquaintance, we most cordially agree. In his untimely removal, science has lost an indefatigable cultivator, and humanity a sincere and consistent friend.—EDITOR.

The following beautiful description of Autumn we copy from the Appendix of the late Professor Norton to Stephen's Book of the Farm. We admire this description for its truthfulness and simple beauty, and any resident of Canada will perceive that the description is as applicable to this country as the United States. The autumn is undoubtedly a most charming season in Canada during the months of September and October. In steamboat travelling, the view of the forests, and the country generally, at this season of the year is delightful. It is equally so in travelling on land, and particularly where elevated situations afford an extensive view. The scenery viewed from Quebec cannot be excelled, we believe, by anything in North America. Strangers to Canada have no idea of the grand scenery of our country, where our lakes, rivers and forests, are on such a grand and extensive scale compared with anything to be met with in our Island "Father Land." It would well repay the trouble of a journey to Canada to see the magnificence of the country, yet almost in its natural state. Professor Norton, we regret to say, did not long survive his notes to the American edition of Stephen's Book of the Farm; and the country of his adoption has sustained a great loss by his early death. Few men would have been able to add such useful notes to Mr. Stephens' book. We admire them particularly for the moderate spirit in which they are written, and their correctness generally. We had frequent opportunities of seeing letters and reports of Professor Norton, and they invariably afforded us unmixed satisfaction for their correctness, moderation, and candour. Yale College will not readily find a Professor of Agriculture to fill the place of Professor Norton; such men are not often to be found. We had not the pleasure of his acquaintance, though we did hope that pleasure would be afforded us, if his life had been spared. Professors of Scientific Agriculture are not numerous, and when we lose one of superior merit, we cannot but view it as a serious loss to the progress of agricultural improvement.

"In our Northern States, Autumn is the most uniformly delightful period of the whole year. August is generally too warm for enjoyment, the mildness of Spring is treacherous, and the heat of Summer oppressive; but in September the weather begins to moderate, and in October and the early part of November we gradually pass into one of the most charming climates that can be found, or even imagined, in any quarter of the

globe. The temperature is neither too cold nor too warm; it is neither the biting frost of winter nor the melting heat of summer, yet the air is inspiring and bracing.

Week often succeeds week of clear, mild weather; the air has not that brilliancy which we perceive at other seasons, but is pervaded by a softer glow; ripe fruits tempt one on every side, the full barns are odoriferous of hay, and the golden ears of Indian corn show themselves from among their loosened husks; all speaks distinctly of plenty and peace.

"After frosts have commenced, and cold chilling wintry winds have already prevailed, we usually experience a return of mild weather for two or three weeks; this period has been called the Indian summer. The sudden coming of our frosts changes the colour of leaves in a remarkable degree. If the early frosts are too severe, the change takes place at once, and the colours are consequently somewhat uniform; but when they begin gently, only a few of the more sensitive trees are at first touched.

"Thus, here and there, on an autumnal morning, we see the brilliant scarlet hue of the maple brightening the skirts or shining from the depths of yet unchanged verdure. Frost after frost succeeds, shade after shade starts out from the living tints of the forest, until at last all is one glowing field of mingled yellow and red, with faint, expiring traces of green. The richness of those broad masses of intense colour is beyond all description.

"Yet there is always a tinge of melancholy thrown over autumnal scenes; for all these mellowed and softened hues, these various and ripened crops, those bare stubble fields, remind us, in the silent but certain evidences which they present, of the approach of Nature's annual death, of our own uncertain tenure here, and of the inevitable fate that will sooner or later overtake all mortal forms of beauty.

"The altered verdure, the quiet fall of the leaf, the gathering of birds for their southern flight, a thousand nameless sights and sounds, tell us that the season of life and vigour in the material world has passed—that sleep, death, and decay, are at hand.

"This is especially apparent in the forest; those tints, often so brilliant, are not the hues of life, but of incipient decay. The leaves no longer absorb carbonic acid, the sun's rays have lost their power to vivify, to cause the internal decomposition and recombination which once went on so vigorously under their influence. We feel, as the leaves begin silently to wing their way with every breath of air towards the earth, that the tree has ceased to respire, that the functions of its external parts have, for a time at least, ended, and that we shall soon again see its bare arms tossing athwart a wintry sky."

ENGLAND AND ITS PROSPECTS.—England is a young country, not an old country, as some mistakenly assert. The energy in it at this moment is enormous; we are but commencing to move, and have a mighty future in store. Statesmen, as it seems to us, are beginning to have glimpses of their real duty—the welfare and advancement of the people committed to



their charge. The time is coming when leaders will have to be leaders, and the world will not be governed or trammelled by shams. The recognition of the importance of the fine arts and practical science in the late speech from the throne is a promising sign of the times, and the proposed Industrial and Artistic University will be looked forward to hopefully. The application of art to the manufactures of the country, and the general advancement and elevation of the industrial population, is no longer a matter of preference, or otherwise, but one of vital necessity. If we stand still, other countries will not, and we shall be passed in the race. The mind must be set to work to aid the hand. As the Duke of Newcastle truly said at the late meeting of the Sheffield School of Design—"These are days in which education is no longer one of the luxuries of life; it has become one of its greatest necessities, for all classes and for all grades of society."—*The Builder*.

**THE ORIGINAL HAYMAKER.**—The hare is only noticed for its extreme timidity and watchfulness, and the rabbit for the burrows which it excavates for its own habitation, and as a nest for its young; but there is an animal related to them, the rat-hare, which is gifted by its Creator with a very singular instinct, on account of which it ought rather to be called the haymaker, since man may or might have learned the part of the business of the agriculturist, which consists in providing a store of winter provender for his cattle, from this industrious animal. Professor Pallas was the first who described the quadruped exercising this remarkable function, and gave an account of it. The Tungusians, who inhabit the country beyond the lake of Baikal, call it Pika, which has been adopted as its trivial name. These animals make their abode between the rocks, and during the summer employ themselves in making hay for a winter store. Inhabiting the most northern districts of the old world, the chain of altaic mountains, extending from Siberia to the confines of Asia and Kamschatka, they never appear in the plains, or in places exposed to observation; but always select the rudest and most elevated spots, and often the centre of the most gloomy, and at the same time humid forests, where the herbage is fresh and abundant. They generally hollow out their burrows between the stones and in the clefts of the rocks, and sometimes in the holes of trees. Sometimes they live in solitude, and sometimes in small societies according to the nature of the mountains they inhabit. About the middle of the month of August these little animals collect, with admirable precaution, their winter's provender—which is formed of select herbs—which they bring near their habitation, and spread out to dry like hay. In September they form heaps or stacks of the fodder which they have collected under the rocks, or in other places sheltered from the rain or snow. Where many of them have laboured together, their stacks are sometimes as high as a man, and more than eight feet in diameter. A subterranean galley leads from the burrow, below the mass of hay, so that neither frost nor snow can intercept their communication with it. Pallas had the patience to examine their provision of hay, piece by piece, and found it to consist chiefly of the choicest grasses, and the sweetest herbs, all cut when most vigorous, and dried so slowly as to form a green and succulent fodder; he found in it scarcely any ears, and blossoms, or hard and woody stems but some mixture of bitter herbs, probably useful to render the rest more wholesome. The stacks of excellent forage are sought out by sable hunters, to feed their harnessed horses, and the (Jakutes) natives of that part of Siberia, pilfer them, if I may so call it, for the subsistence of their cattle. Instead of imitating the foresight and industry of the pika, they

rob it of its means of support, and so devote the animals that set them so good an example to famine and death.—*Kirby's Bridgewater Treatise: Bohn's Scientific Library*.

**PRESERVING FRUITS WITHOUT SUGAR.**—At the New York State Fair at Rochester, there were exhibited thirteen bottles of fruit so preserved by William R. Smith, of Wayne County, viz:—five of cherries, two of peaches, one of strawberries, three of different varieties of currants, one of blackberries, and one of plums. They were examined by a committee, and found of fine flavor; and the committee expresses the opinion that the art of preserving fruit in this manner is practicable and valuable, and that the fruit, when carefully put up can be made to keep as long as may be desirable.

The method of preserving them is thus given to the New York State Society by Mr Smith. They are preserved by placing the bottles, filled with the fruit, in cold water, and raising the temperature to the boiling point as quickly as possible: then cork and seal the bottles immediately. Some varieties of fruits will not fill the bottle with their own juice. These must be filled with boiling water and corked as before mentioned, after the surrounding water boils.

**TO MANAGE A REARING HORSE.**—In preference to the dangerous experiment of pulling a rearing horse backward, I recommend the adoption of the following method:—Whenever you perceive a horse's inclination to rear, separate your reins and prepare for him. The instant he is about to rise, slacken one hand, and bend or twist his head with the other, keeping your hands low. This bending compels him to move a hind leg, and of necessity brings his fore feet down. Instantly twist him completely round two or three times, which will confuse him very much, and completely throw him off his guard. The moment you have finished twisting him round, place his head in the direction you wish him to proceed, apply the spurs and he will not fail to go forward; if the situation be convenient, press him into a gallop, and apply the spurs and whip two or three times severely. The horse will not, perhaps, be quite satisfied with the first defeat, but may feel disposed to try for the mastery. Should this be the case, you have only to twist him, &c., as before, and you will find that in the second struggle he will be much more easily subdued than on the former occasion; in fact you will perceive him quail under the operation. It rarely happens that a rearing horse, after having been treated in the way described, will resort to his trick a third time.—*The Sportsman*.

**LOSS ON STOCK DRIVEN TO MARKET.**—Several days used formerly to be occupied in driving to the London market from the county of Norfolk only, it was found that on an average, a sheep lost 71lbs weight, and 31lbs inside fat, and a bullock 28lbs. These weights were ascertained by a series of trials, average animals being killed and weighed on the farm, and compared with the weights of similar animals when slaughtered in London. This difference of weight was waste, entirely lost to everybody. On the quantity of stock annually sent out by Mr Hudson of Castle Acre, a distinguished Norfolk farmer, this loss was equivalent in value to upwards of £600 a year, nearly the whole amount of which now finds its way to market, as the stock are put into the trucks in the morning, and reach London in the afternoon without fatigue.—*Caird's Agriculture*.

**VEGETABLE POISONS.**—It is all quackery to talk about harmless vegetable medicines. The most violent poisons are derived from vegetables. Nicotine from tobacco; Aconite from Wolf-bane; Strichnine from Nux vomica; Prussic Acid from various vegetables; besides the deadly alkalies of all plants.

MILK, BREAD, AND BUTTER TREES!—"We had heard several weeks before, of a tree, the sap of which is a nourishing milk. It is called 'the cow-tree'; and we were assured that the negroes of the farm, who drink plentifully of this vegetable milk, consider it a wholesome aliment. All the milky juices of plants being acrid, bitter, and more or less poisonous, this account appeared to us very extraordinary; but we found by experience during our stay at Barbula, that the virtues of this tree had not been exaggerated. This fine tree rises like the broad-leaved star-apple. Its oblong and pointed leaves, rough and alternate, are marked by lateral ribs, prominent at the lower surface, and parallel. Some of them are ten inches long. We did not see the flower: the fruit is somewhat fleshy, and contains one and sometimes two nuts. When incisions are made in the trunk of this tree, it yields abundance of a glutinous milk, tolerably thick, devoid of all acidity, and of an agreeable and balmy smell. It was offered to us in the shell of a calabash. We drank considerable quantities of it in the evening before we went to bed, and very early in the morning, without feeling the least injurious effect. The viscosity of this milk alone renders it a little disagreeable. The negroes and the free people who work in the plantation drink it, dipping into it their bread of maize or cassava. The overseer of the farm told us that the negroes grow sensibly fatter during the season when the palo de vaca furnishes them with most milk. This juice, exposed to the air, presents at its surface (perhaps in consequence of the absorption of the atmospheric oxygen) membranes of a strongly animalized substance, yellowish, stringy, and resembling cheese. These membranes, separated from the rest of the more aqueous liquid, are elastic, almost like cautchouc; but they undergo, in time, the same phenomena of putrefaction as gelatine. The people call the coagulum that separates by the contact of the air cheese. The coagulum grows sour in the space of five or six days. Amidst the great number of curious phenomena which I have observed in the course of my travels, I confess there are few that have made so powerful an impression on me as the aspect of the cow-tree. Whatever relates to milk or to corn inspires an interest which is not merely that of the physical knowledge of things, but is connected with another order of ideas and sentiments. We can scarcely conceive how the human race could exist without farinaceous substances, and without that nourishing juice which the breast of the mother contains, and which is appropriated to the long feebleness of the infant. The amylaceous matter of corn, the object of religious veneration among so many nations, ancient and modern, is diffused in the seeds, and deposited in the roots of vegetables; milk, which serves as an aliment, appears to us exclusively the produce of animal organization. Such are the impressions we have received in our earliest infancy: such is also the source of that astonishment created by the aspect of the tree just described. It is not here the solemn shades of forests, the majestic course of rivers, the mountains wrapped in eternal snow, that excite our emotion. A few drops of vegetable juice recall to our minds all the powerfulness and the fecundity of nature. On the barren flank of a rock grows a tree with coriaceous and dry leaves. Its large woody roots can scarcely penetrate into the stone. For several months of the year not a single shower moistens its foliage. Its branches appear dead and dried; but when the trunk is pierced there flows from it a sweet and nourishing milk. It is at the rising of the sun that this vegetable fountain is most abundant. The negroes and natives are then seen hastening from all quarters, furnished with large bowls to receive the milk, which grows yellow, and the ckens at its surface. Some empty their bowls under the tree itself, others carry the juice home to their children."—*Humboldt's Travels*.

## FLOWERS.

BY HORACE SMITH.

Ye matin worshippers! who, bending lowly  
Before the uprisen sun, God's lidless eye,  
Throw from your chalices a sweet and holy  
Incense on high.

Ye bright mosaics! that, with storied beauty,  
The floor of nature's temple tessellate,  
What numerous emblems of instructive duty  
Your forms create!

'Neath clustered boughs, each floral bell that swingeth,  
And tolls its perfume with the passing air,  
Makes Sabbath in the fields and ever ringeth  
A call to prayer.

To that cathedral, boundless as our wonder,  
Whose quenchless lamps the sun and moon supply,  
Its choir the winds and waves; its organ thunder;  
Its dome the sky.

There, as in shade and solitude I wander,  
Through the green aisles, or stretched upon the sod,  
Awed by the silence, reverently ponder  
The ways of God.

Posthumous glories! angel-like collection!  
Upraised from seek or bulb, interred in earth,  
Ye are to me a type of resurrection,  
And second birth.

Were I, O God, in churchless lands remaining,  
Far from all voice of teachers and divines,  
My soul would find in flowers of thy ordaining,  
Priests, sermons, shames.

COCHIN CHINA FOWLS.—Within the last few weeks a gentleman, near London, has sold a pair for 30 guineas, and another pair for 32 guineas. He has been offered £20 for a single hen; has sold numerous eggs at one guinea each, and has been paid down for chickens just hatched 12 guineas the half dozen, to be delivered at a month old. One amateur alone has paid upwards of £100 for stock birds.—*Cottage Gardener*.

STATISTICS OF MUSCULAR POWER.—Man has the power of imitating almost every motion but flight. To effect these, he has, in maturity and health, sixty bones in his head, sixty in the thighs and legs, sixty-two in his arms and hands, and sixty-seven in his trunk. He has also 434 muscles. His heart makes 64 palpitations in a minute; and therefore 3,840 in an hour, 92,160 in a day. There are also three complete circulations of his blood in the short space of an hour. In respect to the comparative speed of animated beings, and of impelled bodies, it may be remarked that size and construction seem to have little influence; nor has comparative strength, though one body giving any quantity of motion to another is said to lose so much of its own. The sloth is by no means a small animal, and yet it cannot travel more than fifty paces in a day; a worm crawls only five inches in fifty seconds; but a ladybird can fly 20,000,000 of times its own length in less than an hour.—An elk can run a mile and a half in seven minutes; an antelope a mile in a minute; the wild mule of Tartary has a speed greater than that; an eagle can fly eighteen leagues in an hour; and a Canary Falcon can even reach 250 leagues in the short space of sixteen hours.

WAGES HEIGHTENED IN CONSEQUENCE OF IMPROVEMENT OF MACHINERY.—It is stated in a report of the commissioners appointed in 1832 to inquire concerning the employment of women and children in factories, that "in the cotton mill of Messrs. Houldsworth, in Manchester, a spinner employed on a mule of 336 spindles and spinning cotton 120 hanks to the pound, produced in 1823, working 74½ hours a week, 46 pounds of yarn, his net weekly wages for which amounted to 27s. 7d. Ten years later, the rate of wages having in the meantime been reduced 13 per cent., and the time of working having been lessened to 69 hours, the spinner was enabled, by the greater perfection of the



machinery, to produce on a mule of the same number of spindles, 52½ pounds of yarn of the same fineness, and his net weekly earnings were advanced from 26s. 7d. to 29s. 10d." Similar results from similar circumstances were experienced in the Manchester factories. The cheapening of the article produced by help of machinery increases the demand for the article; and there being consequently a need for an increased number of workmen, the elevation of wages follows as a matter of course. Nor is this the only benefit which the working man derives in the case, for he shares with the community in acquiring a greater command over the necessities which machinery is concerned in producing.—*Condensed from a Lecture by G. R. Porter to the Wandsworth Literary and Scientific Association.*

Standard Weight of Grains according to the laws of New York:

*Ordinary Weight.*

Wheat.....	60 lbs.	.....	55 to 65 lbs.
Rye.....	56 "	.....	46 to 56 "
Barley.....	48 "	.....	44 to 56 "
Oats.....	32 "	.....	28 to 44 "
Indian Corn...	56 "	.....	50 to 62 "

SALT

Of all the condiments, that most generally in use is Salt; in fact, nothing is perfect without it; the health of every individual depends upon it, being an ingredient in our blood; it is as much required to be partaken of as food or drink; by many it is supposed to be only required to excite the organs of taste—if so, other condiments could be used, equally as exciting; but salt has a far higher destiny, and the great Author of all has bountifully provided the whole human race, in every clime and country, with it; even on those continents far away from the shores washed by the briny ocean, we find it in springs, and in crystal globules encrusting the earth. By all species of the human race in which we are acquainted upon the face of the globe; it is partaken of one way or the other; and although its use is beneficial, yet, if partaken of too largely, it causes disease and death.

Its composition consists of two elementary principles, earth and water, and is chemically known as muriate of soda, being a combination of soda and muriatic acid. Its uses as an antiseptic, and as a condiment, are two well known to be repeated here.

Rock Salt is the unpurified salt, as dug from the mines. This is purified by boiling, &c., and is crystallised by heat.

Bay Salt is the coarse large crystal salt, taking its name from the salt that formerly used to be made in pits by the overflow or letting in of the sea at the head of Bays, and which was evaporated by the heat of the sun. Almost all the fish are cured in France at the present day by this kind of salt, the duty upon foreign salt being so high.

The *Hamilton Express* states that Mr. Murdock, of Ancaster, has invented a machine for sowing, consisting of a hopper and wheel to be attached to the plough. The grain is put into the hopper, and distributes as the furrow is turned up. There is a wheel attached, which by a simple contrivance, regulates the required depth of the ploughing. The advantages to be obtained by this machine are three-fold. 1. A saving of one-third of the seed. 2. It distributes the seed more equally than the present plan. And 3rd, it does away with the necessity of harrowing. As the seed is deposited, the plough throws the furrow over it, and the work is done.

To write is mechanical, but to be an author is no easy matter. Those who think much, for the most part write little—those who write much, generally think little. Every author should be cautious of his subject, sure of his foundation, choice of his materials, before he goes to work.—No architect proceeds without a plan. The painter pictures an idea before he draws upon canvass. The piece, when finished, if it deserves commendation, is but the beautiful image of his mind.

## DOMESTIC RECEIPTS.

### APPLE JELLY.

Take half a hundred of young baking apples—sheep-snouts are the best; take off the rind; cut them in quarters, carefully keeping out the cores and pips; put them in a wide stew-pan, cover them with spring water, and let them boil slowly until reduced to a pulp, about the thickness of apple sauce. Squeeze them in a coarse towel until quite dry. To every pint of juice add one pound of loaf sugar, and the rind of a lemon. Put it on the fire and let it simmer slowly. As it boils, throw in for every pint of juice, the strained juice of two lemons. Stir over the fire, let it boil again; with your spoon take out the lemon rind, and put in pots to cool. The juice squeezed from the apples should be rather thick; the lemon juice clears it.

### WASHING PAINT.

The best method to wash paint is to rub some bath-brick fine, and when you have rubbed some soap on the flannel, dip it into the brick. This will remove the grease and dirt speedily, without injury.

### GOOD EYE-WATER.

Ten tea-spoonfuls of water, one ditto of brandy, one ditto of vinegar.

### TO MAKE A GINGER-BREAD CAKE.

Take one pound and a half of treacle, one and a half ounces of ground ginger, half an ounce of caraway seeds, two ounces of allspice, four ounces of orange-peel shred fine; half a pound of sweet butter, six ounces blanchd almonds, one pound honey, and one and a half ounces carbonate of soda, with as much fine flour as makes a dough of moderate consistence. *Directions for Baking.*—Make a pit in five pounds of flour, then pour in the treacle, and all the other ingredients, warming the butter; then mix them altogether into a dough, work it well, then put in three quarters of an ounce of tartaric acid, and put the dough into a buttered pan, and bake two hours in a cool oven. To know when it is ready, dip a fork into it, and if it comes out sticky, put it in the oven again; if not it is ready.

### TO MAKE A SPONGE CAKE.

Take one pound of flour, twelve eggs, one pound of butter, one ounce of cinnamon, four ounces of blanchd almonds, two ounces of orange-peel shred fine, and two ounces of allspice. Clean a pan, break in the eggs, previously the cream in another butter

pan, and empty it among the eggs; then stir in lightly the flour and the other ingredients, and whisk them well for a half an hour; paper the bottom and sides of the pan, and empty in the cake. Bake as above.

#### GOOSE PUDDING.

Half a pound of bread crumbs soaked in a little boiling milk,—when cold add two or three eggs, a little salt, pepper, marjoram, and thyme, a spoonful of oatmeal, a good handful of suet, and an onion, chopped fine. Spread it in a dripping-pan, and bake it under the goose.

#### TO PICKLE TOMATOES.

As you gather them throw them into cold vinegar. When you have enough take them out, and scald some spices tied in a bag, in good vinegar, and pour it hot over them.

#### YEAST.

Yeast for home-made bread is easily manufactured, thus: Boil one pound of good flour, a quarter of a pound of brown sugar, add half an ounce of salt, in two gallons of water for an hour. When nearly cold, bottle and cork it closely. It will be fit for use in twenty-four hours, and one pint will make eighteen pounds of bread.

#### CURE FOR WARTS.

Cut off the tops of the warts with a pen-knife, so that they may bleed, and then drop in a little oil of vitriol with the end of a quill, or bit of wood cut to a point,—it causes pain for a few minutes, but they soon heal.

#### TO CLEAN SILK.

Quarter of a pound of honey, quarter of a pound of soft soap, two wine glasses of gin, three gills of boiling water. Mix and let stand until blood warm. Dip a nail brush into the mixture, and rub the silk well, especially where there are stains, or the most dirt or spots, and with a sponge wet the whole breadth generally, and rub gently. Then rinse the silk in cold soft water, hang it up to drain, and iron it damp. The quantity stated is for a plain dress.

#### TO REMOVE SUNBURN.

Of scraped horse radish, take as much as will fill a tablespoon. Pour on it half a pint of warm milk, use it before washing, allowing it to dry on the skin, before applying the water. The milk may be cool, but will not keep fresh so long,

### EDITORIAL NOTICES.

#### BOARD OF AGRICULTURE.

In the list of members belonging to this body, printed in the January number, the name of J. B. MARKS Esq., of Kingston, was accidentally omitted.

AGRICULTURAL SOCIETY OF STORMONT, DUNDAS AND GLENGARY.

The grant of £40 from this Society to the funds of the Provincial Association for 1851, having been paid to the Treasurer of the Local Committee at Brockville, and accounted for in their expenditure, the

same does not appear in the Balance Sheet of the Society's Treasurer, as published in the January number.

#### REPORT OF THE TEMPLEMOYLE AGRICULTURAL SEMINARY FOR 1850.

We have been favored with the reading of a recent report, of this well known School in Ireland, by Wm. HUTTON, Esq., late of Belleville, now of Quebec. A farm of 172 Statute acres, beautifully situated on a healthy and picturesque locality is attached to this seminary, and the pupils are regularly instructed in the rudiments of a sound English Education, in connexion with the theory and practice of Agriculture. It was established in the year 1826, and has turned out a considerable number of pupils who now occupy superior situations, as bailiffs or land stewards; and upon the whole, the Institution seems to have done much good, and its present condition appears satisfactory.

### Advertisements.

#### WANTED,

100 JUNE and DECEMBER, and a few JANUARY Nos. of the "AGRICULTURIST" for 1852. Subscribers who can spare any of the above Nos. would oblige by sending them to this Office.

### Important to Stock Breeders!

#### FOR SALE,

A VERY superior Four-Year Old BULL, bred from a thorough-bred Durham Bull, and thoroughly bred imported Hereford Cow.

For further particulars, apply, if by letter (post paid) to the subscriber,

JOHN IRELAND.

Crosby Corners, P. O.,  
Markham, Canada West,  
December 23rd, 1852.

tf.

### The Canadian Agriculturist,

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, to whom all communications are to be addressed, is published on the First of each month by the Proprietor, *William McDougall* at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

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N. B.—No advertisements inserted except those having an especial reference to agriculture. Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.



THE  
CANADIAN AGRICULTURIST  
AND

Transactions  
OF THE  
BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. V.

TORONTO, APRIL, 1853.

NO. 4.

REPORT OF THE COUNTY OF LAMBTON  
AGRICULTURAL SOCIETY FOR 1852.

The Directors of the Lambton Agricultural Society for the past year beg to submit the following Report:—

The County of Lambton contains ten Townships—viz.: Bosanquet, Warwick, Plympton, Enniskillen, Brooke, Sarnia, Moore, Sombra, Euphemia, and Dawn—and contains about 11,000 inhabitants. It is bounded on the north by Lake Huron, and on the west by the River St. Clair. Both branches of the River Sydenham run through it. The River Aux Sables forms its north-eastern boundary for a considerable distance. On these rivers and their tributaries a number of both grist and saw-mills have been erected, and many important sites remain yet unimproved. However, it must be owned, that in mill privileges this County, as a whole, is very deficient. This deficiency, however, is being supplied by the erection of steam mills. At Port Sarnia, there is an excellent grist and saw mill propelled by steam; and in the Township of Moore a steam grist mill is in course of erection, and nearly completed.

This County is well situated in a commercial point of view—Bosanquet and Plympton are both bounded by Lake Huron; Sarnia is bounded on the north by the Lake, and on the west by the River St. Clair. Moore and Sombra are both bounded on the west by the St. Clair. Dawn has the River Sydenham running through it, which is navigable for a considerable distance. The route of the *Great Western Railroad* passes or touches the corner of Euphemia. The Railroad from London to Port Sarnia will pass through Warwick, Plympton, and Sarnia; and the *Toronto, Guelph, and Port Sarnia Railroad* will pass through Bosanquet, Warwick, Plympton, and Sarnia.

When these roads are completed, every part of the County will be within a reasonable distance of a railroad or navigable water, or both.

The River St. Clair, on the western border of this County, is one of the most majestic streams on the globe. Though, from some unknown causes, some seasons it is a few feet higher than others, it is not affected by the greatest freshets, and those living on its banks are thus free from one of the greatest annoyances to which persons who live on the banks of great rivers are usually exposed. Both the River and Lake are abundantly supplied with the finest varieties of fish, large quantities of which are annually caught and exported. The season of navigation usually commences in March, and frequently lasts till the end of December. All kinds of craft, from the Indian canoe to the magnificent steamboat, abound on the River, and a vast amount of business is usually done on its waters. The land on its margin, from Lake Huron to Lake St. Clair, is mostly of excellent quality, and for beauty of situation and convenience cannot probably be surpassed in the Province.

Port Sarnia, the capital of the County of Lambton, is a thriving village, containing nearly one thousand inhabitants. It is beautifully situated on the banks of the St. Clair, about two miles from its egress from Lake Huron. It has a spacious and excellent harbor, in which vessels can lie in perfect safety at all seasons of the year. Port Sarnia is not surpassed by any place west of Hamilton, either as a market for farmers' produce or a place at which imported goods can be purchased to advantage. A vast and continually increasing amount of business is annually done by its enterprising merchants.

The greater part of this County has been but recently settled. In some Townships more than one half of the land is still unoccupied. Almost, probably, every Township in this County has been greatly retarded in its progress by those curses to Canada—*land speculators*. Large blocks of land are obtained at a merely nominal price, and after being held till the labor of the industrious settler makes them valuable, they

are either sold at an extravagant rate, or still retained as a barrier in the way of improvement.

Our forests abound with useful and valuable timber. On the banks of the River *Aux Sables* pine of the best quality is abundant; and through the entire County oak of excellent quality is found in large quantities. In some places, especially on the River Sydenham and its tributaries, there is abundance of the most beautiful walnut. Large quantities of square timber, staves, and walnut lumber are annually exported. Some time since a vessel some distance up the River Sydenham was loaded with walnut lumber, and took her cargo direct to Boston without transshipment.

The timber of the County, being mostly hardwood, is well adapted for the manufacture of potash, large quantities of which are annually made. During the year 1852, there were shipped from Port Sarnia alone about 830 barrels. The average value of this would be at least \$20 per barrel, which on 830 amounts to \$16,000.

The *Substratum* on which the County rests is probably one continuous bed of clay. The soil on the surface varies from sharp sand (in the Plains of Sarnia) to the most compact clay; clay and clayey loam predominating. The soil in general is well adapted for cultivation. The flats of the River Sydenham are probably not exceeded in richness by any land in Canada. The surface of the County, as a whole, is level, though there are considerable tracts beautifully undulated.

The crops raised in the County are wheat, oats, peas, Indian corn, buckwheat, rye and barley,—potatoes, turnips, ruta бага, mangel wurtzel, &c.,—timothy and clover hay. Wheat hitherto has been an uncertain crop. Winter wheat has been mostly sown on new land. Some years the crops are excellent, averaging from 20 to 30 bushels per acre. Other years the wheat on new land is greatly injured by spring frosts and rust. On ploughed land, however, well prepared, it generally does well, averaging from 20 to 25 bus. per acre. Several varieties of spring wheat, such as *Siberian*, *China*, *Black Sea*, and lately *Fife Wheat*, have been sown. *Black Sea* has been mostly used these few years past, and on good ground purposely prepared, yields from 15 to 25 bus. per acre. The past season *Fife Wheat* was sown by several individuals, and is said to be superior to any spring wheat hitherto introduced into the county. Oats grow well, yielding, according to circumstances, from 20 to 40 or 45 bus. per acre. Peas also do well, average crop from 20 to 30 bus. per acre. Indian corn also yields a fair return, varying from 20 to 50 bus. per acre. There is little doubt that, with first-rate cultivation, from 60 to

80 bus. might be raised. Buckwheat, rye, and barley, have been raised only to a very limited extent. Buckwheat and rye grow well. Barley, except when very early sown, seems subject to blight. Potatoes, till within the last few years, grew well in every part of the County, and were largely cultivated. After their general failure, the quantity planted diminished to probably less than one-fourth. The last two years they have done better, and are now more cultivated. The average crop for the past season is from 90 to 100 bus. per acre. White turnips grow well, particularly on new land. Ruta-baga, mangel-wurtzel, carrots, &c., have not been very extensively cultivated. But whenever they have been properly managed, large crops have been raised. Timothy and clover grow well, and produce abundance of excellent hay.

Except in a few localities, gardening has not been much attended to, but in these the most satisfactory results have been obtained. *Orchards* have been pretty generally planted, mostly grafted trees of approved kinds. The quantity of fruit hitherto raised has been but trifling, as the orchards are only recently planted out.

The inhabitants of the County are *mixed* in almost every respect. On the banks of the St. Clair, there are several French settlers, whose fathers took up their abode there 25 or 30 years before such persons as *surveyors* were heard of in this locality. Then we have English, Scotch, Irish and Americans. The modes of cultivating the land are as diversified as the origin of the people. The method, however, perhaps more generally practised is something like the following. A large portion of the *new land* is sown with wheat or oats, and seeded down with timothy and clover. The remainder is used for potatoes, turnips and Indian corn. Next crop this latter is sown with spring wheat or oats, and at the same time is seeded down with grass seed. The land is then generally allowed to remain for hay and pasture for from 6 to 9 years according to circumstances, till the stumps are sufficiently rotted to permit of its being ploughed to advantage. In some cases it is then summer-fallowed, but more frequently sown with pease. After the pease are harvested, it is usually cross-ploughed and harrowed, then ridged up, and sown with wheat. When properly managed in this way, the crop is generally very satisfactory. When this wheat has been harvested, the plan adopted by some farmers—and what is probably the best—is to take as much of the wheat stubble as can be conveniently managed, turn it over in the fall, work it again in the spring and manure it heavily, then put in potatoes, Indian corn, ruta бага, mangel wurtzel, &c. When these crops are kept in proper order with the



plough, cultivator, and hoe, the land is left in the very best condition for spring wheat, barley, or oats.

The manure employed for these crops is wholly from the barn yard. Composts have not yet been adopted, even the barn-yard manure has hitherto been much neglected, and the liquid portion of it almost wholly lost. In some cases, the manure before being spread upon the land is properly fermented, which is a great advantage, inasmuch as this process destroys the seeds of weeds, and facilitates vegetation; in many cases, however, it is taken out without any such process. Different modes of applying the manure have also been adopted. Some haul it out, spread it over the surface, and then plough it in. Others carefully prepare the ground, then run it into drills—for corn 3 to 3½ feet apart, for potatoes about 3 feet, for ruta бага and mangel wurtzel about 30 inches. The manure is then placed in the furrows, and the drills reversed. For Indian corn and ruta бага, &c., a light roller is then drawn up and down the drills. Indian corn is planted in straight rows across the drills, and about 4 feet apart. Ruta бага and potatoes are put in in the usual way. By this method these crops can be mostly cleaned without the use of the hoe, and when properly done the land is in first-rate condition for the succeeding crop.

In a County like this, a great part of which is rather flat, proper draining is a matter of the greatest importance. Some of our best farmers are fully aware of this, and are turning their attention both to the cutting of open ditches, and the making of covered drains. These latter wherever tried have proved of singular advantage. Portions of fields which, before their use, were utterly valueless, have by means of them become far the most profitable. There is one thing, however, which operates as a great drawback to extensive agricultural improvements—and that is the high price of labor. Wages in this County are from 20 to 40 per cent. higher than in the Home District. In no part of the Province have able-bodied labourers a better opportunity of securing a competence for themselves than in the County of Lambton. Even in winter, an active man will easily obtain from \$12 to \$15 per month, and board.

The price of land in this County varies so much in different localities that it is almost impossible to mention an average rate. In some of the back Townships, wild land may be obtained for \$1½ to \$2 per acre. In Sarnia, Plympton, and Moore, the average for wild land is from \$2 to \$4 per acre. On the St. Clair, however, even wild land sells from \$12 to \$16 per acre. Improved farms vary in price \$8 to \$20 per acre.

The "St. Clair Agricultural Society" was

organized in December, 1843, and continued in operation till superseded by the "Lambton Agricultural Society," in 1852. Much benefit to the County has resulted from the operations of these Societies. Stock has been greatly improved. Cattle and sheep in this County will compare favourably with the general stock of the Province. Our horses, as a whole, are inferior. During the past season the Directors of the "Lambton Agricultural Society" have expended a large sum, about \$180, in order to obtain the use of a superior stallion for agricultural purposes. Though this sum appears large to be spent in such a way, and many may be inclined to doubt the expediency of such an expenditure, the Directors are fully persuaded that the County will be amply repaid for the outlay. Besides the animal whose services the Directors secured, other excellent horses were brought in to compete for the premium, so that during the past season farmers in this County had a better opportunity of choosing a stallion than they ever had before.

The members of the "Lambton Agricultural Society" now number 134. (For their names and the sums paid by each, see Appendix A, annexed to this Report.) The Directors would respectfully suggest to their successors in office the importance of employing active agents in order to collect the subscriptions for 1853, and increase as much as possible our subscription list.

The Directors have great pleasure in being able to congratulate the members of the Lambton Agricultural Society on the steady improvement of the County, and on its future prospects. This is manifested in a variety of ways. They would mention only a few. A great improvement has taken place in farm buildings; comfortable dwelling houses, commodious barns and stables are getting by no means uncommon. Within the last few years roads have been much improved, and the means of communication greatly facilitated. From Port Sarnia a plank road has been laid down, extending through the Township, and is likely to be followed by others in different parts of the County. The spirit of improvement was also evinced at our last Annual Show. Though the day was exceedingly unfavourable, the show of live stock, grain, dairy produce, &c., would have done credit to a much older County. The number of articles entered for competition was 219. The number of premiums awarded was 96. The sum of money thus awarded amounted to \$147 75. (For names of persons to whom premiums were awarded, and the amount of each premium, see Appendix B, annexed to this Report.)

In reference to the *Acts of Parliament* recently passed for the regulation of Agricultural

Societies, the Directors are persuaded that a change has been made which is disadvantageous to these Societies, viz.: being obliged to hold our annual meetings in February. Formerly, our general meeting was held on the day of the annual show, and consequently a much larger attendance was secured than can be obtained at almost any other time, and of course a better opportunity was thus afforded for choosing officers for the different Societies, as under the present system only a small attendance can be obtained.

In conclusion, the Directors of the Lambton Agricultural Society return their thanks to the members of said Society for the confidence reposed in them. They have no pretensions to

infallibility; they have no idea that they have done everything in the best possible manner; but they have the testimony of their consciences that they have sought the good of the Society, and have done what they could to further its interests. They now, in giving up their trusts, hope that their successors may be able to carry on the operations of the Society still more successfully; and that peace and prosperity, and that *blessing which maketh rich and addeth no sorrow with it*, may rest upon the members of the "Lambton Agricultural Society."

Ebenezer Watson,  
Secretary.

Port Sarnia, Feb. 1, 1853.

APPENDIX C.—COPY OF TREASURER'S ACCOUNT.

DR. LAMBTON AGRICULTURAL SOCIETY			IN ACCOUNT WITH ARCHIBALD YOUNG, TREASURER. CR.		
1852.		\$ c.	1852.		\$ c.
Jan. 15	To Postage on J. Dougall's communications .....	25	Jan. 1	By Balance due Society .....	363 46
Feb. 9	" " " Government Money .....	16	Feb. 9	" Government Grant, 1851 .....	150 62
" 10	" Printing .....	2 00	" 12	" Cash from Warwick for Stock ..	44 00
" 18	" Postage on Bessy's Paper .....	14	April 29	" Amount of 1852 Subscriptions to this date .....	142 00
" 27	" Order for Printing .....	90	" "	" Cash from Warwick Society .....	123 00
" "	" 5 Copies last year's Cultivator ..	250	" "	" Cash from Moore Society .....	70 00
" "	" Cash for Agriculturist, 1852 .....	64 50	July 1	" Cash for Cultivator Teeth from Jan., 1852 .....	3 00
March 10	" Postage on Agricultural Papers ..	60	Oct. 2	" Government Grant for 1852 .....	398 00
" 15	" Advertising in "Free Press" .....	2 20	Dec. 10	" Amt. for use of Horse up to date	72 00
" 31	" Postage on Askew's and Dougall's Letters .....	10			
April 5	" Postage on Askew's Letter .....	05			
" "	" Order to Gibb \$1, to Ferguson \$7	8 00			
May 12	" Cash paid for Printing .....	4 75			
" 14	" Postage to Warwick and Toronto	20			
June 30	" Order to John Donaldson .....	14 00			
July 3	" Order to John Donaldson .....	286 00			
" "	" Cash paid to E. Watson for advertising .....	3 50			
Aug. 6	" Postage to Moore .....	05			
" 13	" Paid Printing .....	4 84			
Sept. 13	" 1851 Premiums paid to date .....	115 85			
" 23	" 1851 " paid to T.G. Vidal .....	2 00			
Oct. 18	" 1851 " paid to Joseph Lang .....	1 00			
Sept. 28	" 5 Books for E. Watson .....	45			
" "	" Order to Jenkins \$1, to Wilcox \$5	6 00			
Nov. 5	" Paid H. Scobie's Bill .....	3 07			
" "	" Paid Warwick Agricul. Society ..	217 02			
" "	" " Moore .....	123 68			
Dec. 27	" Postage on Canadian Journal .....	50			
" "	" Balance .....	501 47			
		1366 08			1366 08
1853.		\$ c.	1853.		\$ c.
Jan. 1	To 1852 Premiums .....	147 75	Jan. 1	By Amount due Society .....	501 47
	Balance .....	35 02	" "	" Amount for use of Horse .....	6 00
		507 47			507 47
					3 97 2

The above is a true Copy of the Treasurer's Account, as presented at the Annual Meeting, Feb. 1st, 1853.

E. WATSON, Sec. L. A. Society.



TOWNSHIP SOCIETIES IN THE COUNTY OF OXFORD.

Three Township, or Branch Societies were in operation in this County, during the year 1852, and a new one, making a fourth, has been established the present year. Space will only admit of the following brief notices of a few principal facts, selected from the Reports of these Societies:

NORWICH AGRICULTURAL SOCIETY.

This Society was organized in January, 1852, in accordance with the provisions of the late Agricultural Statute,—and it appears to have made an encouraging commencement. Its income, inclusive of its proportion of the Government Grant, for the past year was £79 15s 10½d; the Expenditures £52 5s 9½d; having in hand a balance of £27 10s 1d.

*Officers for 1853:*

Gilbert Moore ..... *President.*  
Andrew Wilson ..... *Vice-President.*  
D. S. Butterfield ..... *Secretary & Treasurer.*

*Directors:*

W. S. Moor, J. Hunt, W. Crawford, G. Delorg, C. Triffry, R. Addison, T. Wilcox, J. H. Connell, and J. M. Lees.

EAST ZORRA AGRICULTURAL SOCIETY.

Amount of Subscriptions, 1852, £27 2s 6d; Government Grant £21, making the total income £48 2s 6d; Expenditure, inclusive of £28 2s 6d for Premiums, £40 12s 8d; having in hand a balance of £7 9s 10d.

*Officers for 1853:*

A. H. Farmer ..... *President.*  
J. Turner ..... *Vice-President.*  
J. Thwaites ..... *Secretary & Treasurer.*

*Directors:*

J. Jackson, J. Cook, J. Sco. t, H. Stewart, A. Wilson, T. Thomson, J. Smith, and Robert McDonald.

INGERSOLL BRANCH AGRICULTURAL SOCIETY.

Cash on hand from previous year £267 8s 9½d; Members' Subscriptions £76 7s 6d; Government Grant, £80 3s 10d; total income for 1852 £424 0s 1d; Expenditure £173 0s 6d; having a balance in the hands of Treasurer of £250 19s 7d.

*Officers for 1853:*

Jas. Henderson ..... *President.*  
J. S. B. dwell ..... *Vice-President.*  
D. Phelan ..... *Treasurer.*  
J. M. Chapman ..... *Secretary.*

*Directors:*

J. Adams, R. Matthews G. Galloway, J. Bennett, T. Brown, J. Choat, J. Matthews, C. E. Chadwick and Thos. Young.

WEST ZORRA AGRICULTURAL SOCIETY.

This Society was organized at a Public Meeting held in Embro, January 11th, 1853, Mr. Angus Munro in the Chair. After an interesting lecture from Mr. Alexander of Woodstock, who takes a most praiseworthy interest in diffusing a knowledge of the science and practice of Agriculture, ninety-seven persons entered their names as

Members. A vote of thanks was passed by acclamation to Mr. Alexander, for the trouble he had taken in assisting to form the Society.

*Officers for 1853:*

Angus Munro ..... *President.*  
Wm. Olive ..... *Vice-President.*  
W. Sutherland ..... *Treasurer.*  
J. Frasen ..... *Secretary.*

*Directors:*

J. Matheson, D. Youngs, J. Richardson, A. M. Corquodale, Jr.; J. Gleedning, W. McKayhonscome, J. B. Wilkinson, W. Tate and D. Sutherland.

COUNTY AGRICULTURAL SOCIETY.

The following gentlemen were appointed Office-Bearers at the Annual Meeting of the County of Oxford Agricultural Society on Tuesday last:—

John Barwick Esq. .... *President.*  
Mr. Sutton F. izell ..... *Vice-President.*  
Mr. Fred. Welford ..... *Do.*  
Mr. Joseph Peers ..... *Secretary & Treasurer.*

*Directors:*

Messrs. William Pautin, Richard Adams, William Chambers, Archibald Thomson, John G. Vansittart, William Peers, and Thomas Allen.

REPORT OF THE AGRICULTURAL SOCIETY OF THE COUNTY OF OXFORD FOR 1852.

Report of the Directors of the Agricultural Society of the County of Oxford presented at the annual meeting, held at Woodstock, on the 22nd February, 1853.

The Directors of the County of Oxford Agricultural Society in preparing their report of the proceedings of the past year (which is required by statute to be presented at the annual meeting) desire to congratulate their brother farmers on the abundant harvest of the past season, bestowed upon us by the bountiful Author of all good.

The improving prospects in the value of our productions is also a subject for congratulation.

The Directors feel justified in expressing the opinion that the Society is steadily improving, which was satisfactorily shewn in the large exhibition and attendance at our annual show, which compared favorably with those of past years. And the Directors on this occasion desire to record their opinion of the very liberal grant made by the County Council and Corporation of Woodstock, to the funds for fencing, (in a substantial manner,) the five acres on which the last Exhibition was held.

The show of all descriptions of stock on that occasion proved, that the County of Oxford has many farmers whose judgment of Stock is of the first class.

The Directors refer with pride to the Agricultural Census lately taken, which shews that our County stands fourth in the scale of "wheat growing," in Upper Canada. This is the more satisfactory when it is borne in mind that a large portion of the County has only lately been re-

claimed from the Forest, at the same time, we believe, that the County of Oxford has dairy productions and stock equal to any other County in the Province.

The Directors consider that it comes within the scope of their duty, to express their opinion of the vast advantages that will arise to this Colony, from the Exhibition of all Nations held in London, from the fact that many of our resources and productions were there made known.

Holding this opinion, the Directors earnestly hope that Canada may be as well represented at the Exhibition of all Nations to be held at New York, in May 1853, as she was in London in 1851, which must produce incalculable benefits to this hitherto comparatively unknown country, and would give substantial evidence to our "calculating neighbors," that Canada is not wanting in valuable productions, and that Canadian intercourse is worth cultivating.

The Directors observe from a circular issued by the authorities in New York, engaged in

managing the arrangements of the Exhibition, 'that His Royal Highness the Prince Albert has intimated his willingness to exhibit produce from the Royal farms.'

The Directors look forward to the early completion of the Great Western Railway, when without a doubt the position of the farmers in the County of Oxford will be equal to that of any of their brethren in Canada West.

The County Society furnish a copy of the "Canadian Agriculturist" to each of their members. The Directors regard this paper as well entitled to, and worthy of, the support of every farmer in Canada, from the very able and practical manner in which it is Edited, and every farmer would find at the year's end that pounds were put into his pocket by the investment.

The Directors consider it worthy of notice to furnish a statement of the sums of money expended by this Society, (since its formation in 1836) in furnishing improved stock for the benefit of its members.

Year	Horses	Cattle	Sheep	Pigs	£	s	d
1841	Services of "Predictor," a thorough bred horse.....	.....	.....	.....	20		
1841	.....	Purchased 2 Short Horn Bulls.....	.....	.....	65		
1846	Services of "Cullpepper," a thorough bred horse.....	.....	.....	.....	50		
1847	Services of "Cullpepper".....	.....	.....	.....	30		
1848	Purchased "Sida Hammet," an Agricultural Stallion....	.....	.....	.....	137	5	
1848	.....	.....	Purchased 10 Leicester Rams.....	.....	12	10	
1849	.....	Purchased 2 Ayrshire Bulls.....	.....	.....	18	15	
1849	.....	Purchased 2 Short Horn Bulls.....	.....	.....	30		
1849	.....	.....	Purchased 5 Leicesters Rams and 3 South Down Rams.....	.....	16	10	
1850	.....	.....	Purchased 5 South Down Rams.....	.....	10		
1850	.....	.....	.....	Purchased a Yorkshire Boar.....	5		
1851	Services of "Transfer," a thorough bred horse.....	.....	.....	.....	150		
1852	.....	Purchased a Hereford Bull.....	.....	.....	26	5	
					£571	5	0

JOHN BARWICK, *President.*  
JOSEPH PEERS, *Treasurer.*

The sum of £829 5s. was also expended in awarding premiums. Total amount expended in the purchase of Stock, £571 5s.; in awarding premiums, £829 10s. In all, £1,400 10s.



**THE BLUE BIRD.**—Before our next week's paper is issued, our readers may expect to see again amongst them this little winged harbinger of spring. Of all the feathered migratory tribe, the Blue Bird is one of the first to brave the lingering frost and snow of our inclement winter.—We are informed by a friend, an ardent naturalist, that, from close observation for many years, he has noted the fact of its return to these regions occurring, uniformly, between the 10th and 15th days of this month. The subject of the migration of birds has for some time been a study with the naturalists of Europe; though we are not aware of the same attention having been paid to it in this country. It forms an interesting feature in natural history, and one easily attained to a certain extent. These few remarks may perhaps be the means of gaining for it some notice.—*British American, Woodstock, March 11th.*

## The Agriculturist.

TORONTO, APRIL, 1853.

### BUREAU OF AGRICULTURE.

It is with much satisfaction we observe that the Hon. MALCOLM CAMERON has already put into operation the new and important Department over which he presides. To mature, however, the numerous arrangements belonging to a Governmental Department of Agriculture and Statistics, will necessarily require much patient study and investigation, and cannot therefore be completed in a day, or a year. The value and permanency of the Agricultural Bureau, will, in our estimation, greatly depend on a cautious manner of arranging its details of operation; slow but sure development, rather than mere speed, will be the proper measure of its success. If conducted—as we hope and believe it will—in a cautious and persevering spirit, in connection with our Agricultural Boards and Societies, it cannot fail of becoming powerfully instrumental in promoting the most important interests of the country.

The Minister of Agriculture, we observe, has appointed Mr. Turner, formerly connected with the *Montreal Courier*, to visit the Ottawa District, with a view to collect information relative to that interesting and important section of the country. This is a good beginning. We have not the pleasure of Mr. Turner's acquaintance, but from all sources, we learn, that he is eminently qualified for the task he has undertaken, and that the appointment will give entire satisfaction.

The flax question—as we intimated in a previous number—has engaged the attention of the

Minister. Mr. A. Kirkwood, is now on his way to the United Kingdom, for the express purpose of ascertaining on the spot, the best modes of cultivating, preparing, and manufacturing flax, as practised in Ireland and other countries. Mr. Kirkwood is a young man possessing a general knowledge of the theory and practice of Agriculture, and has had some previous acquaintance with the growth and manufacture of flax in Ireland; and from his correct, observant habits of mind, and general intelligence, we shall look forward with no ordinary expectation to his report, on his return. It is now quite time that the Flax question, which has of late engaged much attention in Canada, should be put to a sufficient practical test, to satisfy the enquiries and reasonable expectations of the country. The right means are now being taken for the solution of this important question.

### BOARD OF AGRICULTURE OF LOWER CANADA.

It is gratifying to see so early the fruits of the new Agricultural Statute, passed so recently as November last. A Board has been organized for the Lower Province: and as both sections are now placed on a similar footing under the present law, it is much to be desired that a spirit of mutual co-operation should henceforth be more generally cultivated between the two great sections of the United Province, for the promotion of Agriculture, than has hitherto obtained. That such will be the result, we will not permit ourselves to doubt.

SECRETARY'S OFFICE,  
Quebec, February 18, 1853.

His Excellency the Governor General in Council has been pleased to appoint the undermentioned Gentlemen to compose the Lower Canada Board of Agriculture under the Act 16 Viet. Chap. 11, viz.:

Thomas E. Campbell, of St. Hilaire de Rouville;  
Alfred Pinsonneault, of Montreal;  
John Dods, of Montreal;  
Joseph C. Tache, of Kamouraska;  
Pierre B. Dumoulin, of Three Rivers;  
Robert N. Watts, of Drummondville;  
James Thomson, of Sheffield; and  
Edward J. De Blois, of Quebec, Esquires.

### FRONTENAC AGRICULTURAL SOCIETY.—THE RIGHT SPIRIT.

We observe that at the annual meeting of the above society recently held in Kingston, the proposition for presenting some tangible token of gratitude and esteem to their late respected and indefatigable President, ANGUS CAMERON, Esq., met with a most cordial reception. Another illustration is thus afforded of the benefits of Agricultural Societies, apart from their ma-

terial or mere pecuniary advantages: they tend to call out individual talent and exertion, and to promote a kind neighborly feeling. Mr. Cameron is richly deserving the respect and confidence of the Society, over whose proceedings he has so faithfully and advantageously presided. A Kingston cotemporary observes:—

“The generous views entertained by Mr. Cameron, and his anxiety to avoid the appearance of monopolizing the Office of President, which he has so long filled with honor to himself, and to the great benefit of the Society, has induced him to resign, contrary to the expressed wishes of the meeting. This self negation on the part of the late President, when he considered the interests of the Society, and consequently of Agriculture at stake, is only consistent with the course which he has invariably followed during all his connection with the Society, and it gives us the most sincere pleasure to perceive that the County Agricultural Society intend to show their appreciation thereof, having taken initiative steps for presenting him with a token of esteem on the part of its members and of the public generally.”

The *Argus* further remarks in reference to his successor, in which, those of our readers that have the honor of his acquaintance, will perfectly agree:

“The only thing that can reconcile us to the retirement of Colonel Cameron is the appointment of Baron de Longueil to succeed him, appointed unanimously on the nomination of Colonel Cameron. Since the Baron has begun to interest himself in agriculture, no man in the counties, and very few in Canada, has done as much for the advancement of those branches, of which he has taken hold, as was evinced last year at the Provincial Fair, at Toronto, where he took more prizes than any one single exhibitor. The Baron is an enthusiastic Stock improver, and a scientific and practical horticulturist; he has introduced all the modern improvements, and has made use of all the enlightenment of modern science to advance the progress of his favorite pursuits. No gentleman could have been found more suitable to succeed the late President of the County Agricultural Society than the Baron de Longueil; and, in nominating him as his successor, Col. Cameron has added one more to the many claims which he has to the gratitude of the agriculturists of the United Counties of Frontenac, Lennox and Addington.”

#### GARDEN, AGRICULTURAL, AND FLOWER SEEDS.

The season for commencing Agricultural and Horticultural operations having arrived, we embrace the present opportunity of calling the atten-

tion of our readers to the extensive and carefully selected stock of seeds of Mr. JAMES FLEMING, of this city, Seedsman, by appointment, to the Provincial Association and Board of Agriculture of Upper Canada, whose advertisement will be found on our last page. His large stock of seeds, just imported direct from England, has arrived in excellent condition, and, after a personal inspection, we can safely recommend our readers, who may be in want of such articles, to pay Mr. Fleming a visit; of whom they may also obtain British and American garden tools, of the best workmanship.

In arranging material for his catalogue, Mr. Fleming has been careful to select only such kinds of vegetable and flower seeds as he can with confidence recommend—the vitality of each sort being fully tested before offered to the public. New varieties, and such as are raised in greater perfection in Europe, are annually imported from sources that can be relied on; and those that grow to perfection in this country are raised under his own inspection.

The following plain, practical hints on the cultivation of ordinary garden vegetables, are taken from Mr. Fleming's printed catalogue, and will be found useful to many of our readers:

Most kind of seeds grow more freely if soaked in soft water from 12 to 48 hours before sowing. Seeds of a hard nature, such as blood beet, mangel wurzel, nasturtium, &c., often fail from want of attention to this circumstance. Rolling the ground, after sowing, is very beneficial, and will assist in making the seeds vegetate more freely. When a roller is not at hand, it may be done with the back of a spade.

*Kidney or French Beans* may be planted any time in May, in drills two inches deep, the beans two inches from each other; the drills about 18 inches apart. If a regular succession is required, sow a few every few weeks, from the 1st of May to the 1st of July.

*Broad, or Windsor Beans*, do not succeed well in this climate, the summer heat coming on them before they are podded, which causes the blossoms to drop off. The best soil to grow them in is a rich, stiff clay, and on a northern border, shaded from the mid-day sun; sow in drills two feet apart, the drills two inches deep, and the seed 3 inches asunder.

*Blood Beet, Long and Turnip*, may be sown in a good, rich, deep soil, about the first week of May. Draw drills about a foot apart and one inch deep; sow moderately thick; when the plants are up strong, thin them out the distance of six inches from each other in the rows.

*Broccoli and Cauliflower* require a deep, rich soil, of a clayey nature, and highly manured. To produce early Cauliflower or Broccoli the seed ought to be sown in a hot-bed, early in March. When the plants are quite strong and hardy, they



may be planted out in the garden, about the middle of May. Plant in rows two feet square. The kinds that will do well in this climate are the Early London and French Cauliflower, Purple Cape and Walcheren Broccoli.

**Cabbage**, both early and late, may be sown any time in May. The best situation for raising the plants is a rich, damp piece of ground, partially shaded. Seed sown in a situation of this kind is not so subject to be destroyed by the black flea. When the plants are strong, they may be planted out in rows, and managed the same as directed for cauliflower. The best kinds for summer use are the Early York, Battersea, and Vannack; for winter use the Drumhead, Large Bergen, and Flat Dutch.

**Cucumbers** may be sown in the open ground any time in May. They require a good rich soil. Sow in hills, four feet apart, leaving only three plants on each hill. The cucumber and melon vines are liable to be attacked by a yellow fly or bug. Soot, charcoal dust, or soap suds, applied to the plants, will assist in keeping them off.

**Musk and Water Melons** may also be sown at the same time, taking care to sow the different kinds a good distance apart from each other, as they are apt to mix. Plant in hills six feet square, leaving only three plants on each hill. When the plants have grown about six inches, stop or pinch out the top of the leading shoot; which will make the plants throw out lateral shoots, on which you may expect to have fruit.

**Carrots.**—The most suitable ground for growing Carrots, is a deep, rich soil, that has been well manured the previous year. Sow any time in May, in drills one foot apart, and one inch deep. When the Carrots are up, thin them out, four inches apart, and keep the ground free from weeds. The kinds that are generally sown in the garden are, the Early Horn, Long Orange, and Red Surrey; for field culture the White Belgian and Altringham. The produce of one acre of field Carrots, when properly cultivated, may be rated at from 500 to 800 bushels. In cultivating them on the field system, the drills ought to be two feet apart, and the Carrots thinned out, at least, twelve inches asunder.

**Celery.**—This vegetable is much esteemed as a salad. To have early Celery the seed requires to be sown in a hot-bed, in the month of March; for winter Celery, the seed may be sown in the open ground, any time before the middle of May. Sow on a small bed of fine, rich earth; beat the bed down with the back of the spade; sift a little fine earth over the seed; shade the bed with a mat or board until the plants begin to appear. Celery plants ought to be picked out into a nursery-bed as soon as they are two or three inches high. Cut their roots and tops a little, before planting; water them well, and shade them from the sun until they begin to grow. Let them remain in the nursery-bed about one month, after which they will be fit to transplant into the trenches. The best sort of soil to grow Celery in is a deep, rich loam, and in an open part of the garden. Mark out the trenches a foot wide, and three feet between each trench. Dig the trenches one foot deep, laying the earth equally on each side. Put three or

four inches deep of well rotted manure into the bottom of each trench; put a little of the surface soil over the manure; dig it well up, incorporating the soil well with the manure; dress the plants by cutting off the long leaves and the ends of the roots. Plant in single rows, along the centre of each trench, allowing six inches between each plant. Water them well, and shade them from the sun until the plants begin to grow. In earthing up Celery great care should be taken not to cover the heart of the plant.

**Lettuce** is easily raised from seed, which may be sown from the 1st of April to the end of June. If good headed Lettuce is wanted, the plants should be transplanted out on a rich piece of ground, in drills, 12 inches apart, and six inches in the drill. The Malta, Green Coss, and Victoria (cabbage) are the most suitable kinds to sow, as they head without tying up.

**Onions.**—The yellow and large red are the best for a general crop. The ground for Onions should be well prepared, by digging in plenty of well-rotted manure. The seed may be sown from the middle of April to the middle May. Sow in drills, one inch deep and 12 inches apart. When the young Onions are up, thin them out to the distance of three inches apart.

**Parsnips** require a deep, rich soil. Sow in drills, one inch deep, and the drills 15 inches apart. Cultivate the same as directed for Carrots.

**Radishes** should not be sown in the open air sooner than the middle of May. They require a deep, sandy soil, that has been well cultivated and manured the previous year.

**Rhubarb** is a perennial plant, and may be raised from seed. Sow about the middle of May. When the plants are one year old, they should be transplanted into a very deep, rich soil, in rows three feet apart. The foot-stalks of the leaves should not be cut until the plants are two years old.

**Salsify** is an excellent vegetable. The roots, when properly cooked, resemble oysters in flavour. The seed may be sown from the 1st of April to the middle of May. They require the same kind of soil and cultivation as directed for Carrots.

**Spinach** is an useful vegetable, and very hardy. Seed sown in the month of September will stand over the winter, and come in for early greens in the spring. For summer use, seed of round Spinach may be sown from May to July. It requires a rich soil. Sow in drills, one foot apart.

**Tomatos** are much cultivated for their fruit.—To have them early, the seed should be sown in a hot-bed, early in March. When the plants are a good size, and spring frosts are over, plant them out in the garden; let the plants be four feet apart. Plant on a south border near a fence, and they will produce abundance of fruit.

**Turnips.**—One of the best sort for the garden is the Early White Stone, which may be sown from the middle of May to the end of August.—Sow in drills, fifteen inches apart, and thin out the plants to eight inches asunder. Field Turnips, such as Swedish, Aberdeen, Yellow, &c., may be sown in drills to feet apart, about the middle of May. White Globe, and Flat Norfolk,

will do to set about the middle of July. Turnips are very subject to be eaten by the black flea. A good remedy to steep the seed one night in train oil. This will greatly promote germination, and the growth of the young plants.

#### EAST OXFORD FARMERS' ASSOCIATION.

*To the Editor of the Canadian Agriculturist.*

SIR,—It affords me much pleasure to transmit to you the report of our last meeting, which gave great satisfaction. It must ever be deeply interesting to the farmer to investigate the results of different systems of cropping, to ascertain how the largest amount of valuable produce may be raised, without deteriorating the soil. The proceedings were opened with the following observations from our President, Mr. Alexander.

I am, Sir,

Your obedt. servt.,

L. C. TEEPLE,  
*Secretary.*

Woodstock, East Oxford,  
March 8th, 1853.

The natural fertility of the soil throughout this county is so great—particularly those lands which have been recently reclaimed from the forest, as shown by the great abundance of every kind of farm produce, and by the rapidly improving circumstances of the population—that many have never yet thought of the importance of the subject named for discussion at this meeting. They have not yet felt the necessity for adopting improved systems of rotation, with a view to the permanent productiveness of their land. Some are necessitated to crop heavily for immediate wants; perfectly conscious, perhaps, that they are drawing on their capital. Others are not, to the full extent, aware of the results of severe and indiscriminate cropping; not having yet exhausted those rich elements which it has been the work of ages to accumulate. However that may be, a very slight reference to the statistical returns of older districts in this Province, but especially in the Northern States, will show that good husbandry is indispensable everywhere. The complaints in those quarters of diminishing scales of produce have been very general, according to Mr. Hind, while in some of the Eastern States, where wheat was once largely grown, its culture has greatly decreased. It is vastly important that such matters should be dwelt upon publicly, involving, as they do deeply, the consideration of the means whereby we may hope, as an agricultural people, to attain to a position of solid and permanent prosperity. We have all witnessed within our own limited experience the extraordinary difference in the results of good and bad farming. Every one knows the disadvantages attending the cultivation of impoverished lands. The same tillage is required,

the same expenses for seed, harvesting and thrashing are incurred, while the crops will hardly pay for labour expended. The soil is, in fact, the *treasury* of the farmer's wealth—the stores which are found therein may be husbanded with care, to minister abundantly to all the wants of man with the return of the seasons, or they may be greatly wasted and dispersed in a short period of time. It is for the purpose of investigating this important matter that we are now assembled. I have been requested to make a few introductory observations, illustrating some of the facts which science has disclosed to us, but I must be permitted to say that I feel deeply my inability to do justice to a subject so comprehensive in its range; and that I will only venture to touch upon one or two of the most prominent points bearing upon the question at issue.

It will first be necessary that I should bring before your notice what has long been established by chemical investigation: that the constituent parts of all matter, whether of the soil which we cultivate, of all animals and soils existing, or of the atmosphere by which we are surrounded, (for all these stand in immediate relation to each other), may be divided into two classes of substances or bodies. We find, for instance, with regard to wood, that it is combustible, and that under the action of fire nine-tenths of it, as of all vegetable substances, will go off in the form of smoke, and become part of the atmosphere; but a certain part is indestructible, and remains. A grand division has thus been established. That part which burns away is termed the *organic* part of the plant; the part which remains, or the ash, the *inorganic*. But to give a more correct and definite meaning of the terms, the organic may be said to embrace all that part of the plant which is the product of life and living organs. The atmosphere may be considered the great *reservoir* of organic food, acting upon and combining with the inorganic elements to produce fertility of soil; while it is constituted to nourish and sustain all vegetable growth and development. But we come to consider the nature of those *inorganic* substances in the soil which are indestructible, but which we find wonderfully interwoven with the organic in the works of creation. The *inorganic* elements are sulphur, phosphorus, potash, soda, lime, magnesia, iron, silica, chlorine and iodine. Their presence in the soil is indispensable to the growth of the grains and every kind of crop. What we term fertility is the existence of *organic* and *inorganic* matter in such relative proportions as produce the most perfect vegetable growth, the most perfect grain and roots. Those elements constitute the food of plants—they enter into and become the constituent parts of whatever is



grown, and thus they may, to a greater extent, be extracted from the soil by immoderate and indiscriminate cropping. One marked peculiarity has been discovered, to which it is important I should call your attention, viz: that the *inorganic* parts of one plant are very different from those of another. The relative and absolute quantities, even of mineral food, taken from the soil by the various crops, have been ascertained by a careful analysis of the ash. We find that the chief ingredient in the ash of the grains wheat, barley, and oats, is phosphoric acid; of straw, silica or flint; of turnips, corn and potatoes, potash and soda; of peas, beans and clover, magnesia and lime; from which we can only draw one deduction—that without the presence of such mineral substances in the soil, our grain, roots and clover could not grow.

The discovery of these facts will be found to have a marked bearing on many practical points now to be considered. We observe that a great variety is necessary for the sustenance of man and the domesticated animals. Nature has provided all the elements to produce this variety. Free power has been given to man to draw upon these, while he is endowed with understanding to husband them, so that they shall be preserved to minister to his abundance. We are thus enabled to understand why it belongs to good husbandry to raise such a succession of crops, in rotation, as will bring out the full capabilities of the soil. But there is one point requiring further illustration, which is the restorative power of the atmosphere, in furnishing fresh supplies of inorganic food by the disintegration and decomposition of mineral substances. Nature is always silently at work, reproducing all the elements which have been extracted by the husbandman. But it is a gradual process, and the most beneficial operation will be that which draws upon all the powers of the soil in regular succession, so as to prevent the repetition of the same species of plant within a given period.

Thus, while wheat is growing, which draws principally upon silica and the phosphates, soda and other elements are accumulating, and so on in rotation. But a subject equally important is the due preservation and application of manure, without which it is impossible that any ordinary farm can continue for a succession of years to yield a proper return. If we calculate the amount of mineral substances carried off every year by the exportation of grain, pork, beef, wool, and other produce, the good farmer will see the necessity of husbanding with every care the manure on the farm; he will, to the utmost of his power, be always restoring what he can to the *treasury*. He will further study to give the manure to such crops as will be most benefitted by it, and can receive it without hazard and injury. Recent manures, applied to certain soils

before fall wheat, may produce too much straw, and increase the liability to rust and mildew, whereas it may be given with certain benefit to corn, turnips, and other crops, and after one year's exhaustion the remaining elements would minister more safely to the cereal grains. A healthy cultivated plant (as Mr. Hind observes) requires a properly balanced supply of organic and inorganic food. If too large a quantity of the former is present, the straw will be too rank, while there will be a poor formation of seed. A material point with the farmer is the quantity and quality of his grain. These are matters involving many nice considerations and much scientific skill. It is erroneous to suppose that the first crop will exhaust all the good of the manure. If a root crop, it may extract the soda and potash so far as not to produce immediately another of the same class in such luxuriance; but there might still remain abundant materials for a grain crop, and afterwards for peas or clover. On the subject of fallow, I desire to make one or two remarks. It is necessary that the ground should be kept clean as well as rich, which is most easily effected, where labour is scarce, by the naked fallow; but many practical agriculturists are of opinion that this might be *less frequently* required by the introduction of improved systems of rotation. With our present prospects of railroads, and improved markets for every kind of produce, there will be more encouragement to the farmer to keep up the fertility of the land to the highest remunerative point. It will pay better than it has done to raise a larger quantity of stock. There will consequently be a greater supply of manure, and with the aid of horse hoes and cultivators we may hope to see a large part of the naked fallow superseded by green crops, the cleaning cultivation for which is so beneficial. The great value of clover upon the lighter lands is now well understood, and it must be advantageous to raise more sheep than we have hitherto done, and always keep the full complement of stock in the pastures. But I feel that I am trespassing too long on the time of this meeting, and would only remark, in conclusion, that although the principles and laws which regulate the growth and secure the full development of our grains are fixed and immutable, it is still impossible to lay down rules which shall be generally applicable. The rotation of crops must be regulated by considerations of climate and by the character and composition of the soil, for there are very few farms of such uniform texture that the whole of the fields could be all cropped in the same manner with advantage. It happens also sometimes that the market value of one kind of produce is more remunerative than that of another. These and all other circumstances must have their weight with the farmer, whilst he is

endeavouring to keep to a course of cropping which is in harmony with the principles I have just endeavoured to illustrate. What is essential to profitable farming is that all the field operations should be done thoroughly, as well as economically. Putting in crops badly will bring little results. The land must be kept clean as well as rich. In other words, the farmer must get and keep possession of his soil. To sum up in few words, good husbandry implies clean and thorough cultivation, the use of clean seed, maintaining the proper complement of every kind of stock, while due attention is paid to the preservation and application of manure; but above all, the selection of such a rotation of crops as will bring out, without deteriorating, the full powers of the soil.

Mr. HENRY PEERS, Vice-President, felt this to be one of the most important subjects which can occupy the farmer's attention. Indiscriminate cropping, and general bad husbandry, will soon show results which are not to be mistaken. It might be said that the farmers of England, who have to pay heavy rents on short leases, might be excused for deteriorating the land by severe cropping; but here no such necessity exists. He did not feel competent to give a rotation of crops suitable to other soils; but he had been endeavouring to adopt, upon a portion of his own farm, the following rotation:—1st year, corn and roots; 2nd, barley; 3rd and 4th, clover; 5th, peas; 6th, fall wheat; 7th, oats; which he thought would keep the land clean, and dispense with the naked fallow. He would manure before the peas, and again before the corn and roots—that will be twice during the rotation. He attached great value to turnips; had found it most profitable to raise a considerable field of them, which enabled him to winter a large quantity of stock. But another portion of his farm he found it advantageous to reserve as more permanent pasture, and for other purposes. He fully coincided in the views which had been expressed as to the injury done to the land by constant grain cropping.

Mr. WELFORD, Blandford (who imported last season a fine Short Horn Bull from England, and will soon have a considerable herd of Short Horn stock), observed that it had been generally thought that it would not pay to attend properly to the housing of stock and winter feeding with grain; that the system had been to sell all the grain, and winter the stock on straw. But he was of a different opinion. He housed the greater part of stock, and thought that the prices and markets were likely to be such as would amply remunerate the farmer for bestowing more care and better feeding, and he would be repaid by the additional supply of manure, which would be of great value in carrying out a proper rotation of crops.

Mr. ALLAN and Mr. SHELL gave the rotations which they had carried out and found advantageous on their own farms, which we regret not being able to introduce at present, having lost the notes we took of them. Mr. Allan had found no difficulty in keeping his land clean without the introduction of naked fallow, by adopting a certain rotation, and working thoroughly what he had under cultivation. Messrs. Ellison, Blandford, Hatch, E. Zorra, McCallum and Garbutt, E. Oxford, and others, gave further illustrations of their systems of cropping. It was altogether the most interesting subject which has yet come under the notice of the Association. The President remarked that there was nothing so the whole range of agricultural practice or science which was more worthy of the farmers' attention. He desired it to be understood that it was with great diffidence that he advanced his views upon a question of such importance and difficulty. Many of those present were, from their long and varied experience, fully competent to pronounce upon their soundness and practicability; and it would be beneficial as well as interesting to invite the further consideration of the subject upon a future occasion.

The next meeting is appointed to be held in the Town Hall, on Monday, 23rd May, at five o'clock P.M.

#### SUBJECTS FOR DISCUSSION.

- 1st.—The cheapest and most expeditious method of raising the different Root Crops, and most profitable way to apply manure in their cultivation.
- 2nd.—The further consideration of the Rotation of crops.

The members of the Committee to meet punctually at four o'clock.

#### NEW METHOD OF INCREASING THE FECUNDITY OF FISH.

The following is an extract from what appears to have been a most interesting lecture on Natural History, recently delivered before the *Woodstock Mechanics' Institute* in this Province, by Thos. J. Cotile, Esq.

"I have recently received from England a small pamphlet—it is on the artificial production of fish, fish-ponds, rivers, &c. The discoverers were two fishermen named Gehin and Remy, living on the Moselle; they were not book Naturalists, they knew nothing of systems, but they were the right sort of Naturalists, observers of nature in her own haunts. They had discovered that the yield of fish in their river had decreased, and was decreasing every year; they determined to watch and study their habits,



and at last, the bright thought struck them, that if they could collect the eggs it would be easy to preserve them, and fecundate them by means of the milt of the male. Their first experiment was crowned with success, they persevered and were still more successful: their plan was at length brought before the notice of the Academy of Sciences, at Paris, by a neighboring medical man, Dr. Haxo. "The Academy seeing at once, the immense national importance of the two fishermen's proceedings, hastened to call the attention of the Government to it. The Government on its part, after making proper enquiries, and finding all that was said true, resolved to have the system applied to all the rivers in France, and especially to those in the poorer Provinces,—Géhin and Remy were accordingly summoned to Paris, and taken at once into the employment of the Government at good salaries; they were treated too, as men who had made a great and scientific discovery, and secured an immense benefit to their country. Many Savans vied with each other in doing them honour, and the President of the Republic and his Minister made them dine at their tables and figure at their receptions." The value of this method is not the discovery of the fecundation of the egg, for that was known to Naturalists before, but the bringing the knowledge into practical use. Their method is to preserve the eggs in boxes, placed in favorable places in streams, and after they are hatched, protecting the young till able to take care of themselves. It is computed the trouts lay nearly one million eggs, and that not above one in a hundred if left to themselves, comes to maturity,—you may, therefore, imagine, how this method would increase the supply. In this part of Canada, we are very badly supplied with fish, yet there is no lack of water,—why should not this plan be tried here? I think it of such importance, that I shall probably bring it before you in another shape."

Mr. Cottle then proceeded to remark on the beneficial influences the study of Natural History exercised on the mind, and amongst other things observed that it was well understood to promote tranquility of mind, which tends to longevity. In illustration of this, he quoted the ages of those naturalists whose memoirs have been published in the Naturalists' Library, amounting to thirty-nine—of these one lived to 90 years—eight between 80 and 90—ten between 70 and 80—twelve between 60 and 70—six from 50 to 60—two from 40 to 50 years of age.

The Lecturer, says the *British American*, concluded by making the following practical suggestions, embodying offers of a most liberal nature to our Mechanics' Institute, and which we shall hope to see its members take immediate steps to avail themselves of—he said:

"Local Museums are most useful to the enquiring Naturalist, or Archaeologist, (for even in this new country, are sometimes found relics of the antiquities of those former lords of the soil, whose race seems fast passing away, and whose last vestige, will soon be valuable), but it is with natural history that I have to do, and most gladly would I see an attempt made, to form a collection of the animate and inanimate forms of our neighborhood. A herbal of the plants of our locality might be easily formed, and is a part of the collection in which our fair friends might well assist. To dry a plant it is only necessary to lay it between sheets of blotting paper, and place a moderate weight on it—the paper should be changed each day until the plant is dry—the damp paper of to-day may be dried ready to receive the plant to-morrow—a piece of paper should be attached to each plant, with the date of the day it was plucked, and where gathered; the specimen should be in flower, and when possible, the fruit and root should be preserved—transversed and longitudinal sections of our woods would also be valuable. The specimens of an extinct creation found in our limestones, are very numerous and interesting—insects also abound and are easily collected, but the cabinets necessary for their preservation are expensive, still, that should not deter from their collection. Specimens of quadrupeds, birds and fish, take time and skill to prepare—and till you are able to procure a paid Curator, you could hardly find any one to set them up, except in this instance, I should be very happy to act as your Curator in arranging your collections, until you can get a better."

[The lecturer in concluding offered, in the most generous manner, to give a lot of ground for the erection of a suitable building, for the purposes of the Institute, in which the natural productions of that fertile district of Canada, could be deposited and systematically arranged. Success to so good an enterprise, and may the example be followed in other places.—EDITOR.]

#### TOWNSHIP OF HAMILTON FARMERS' CLUB:

At a meeting of the Township of Hamilton Farmers' Club held at Reynold's Inn Court House, on Saturday February 26th, 1853. Present—Messrs. Hume, Bourn, Masson, Forsyth, A. McIntosh, A. J. Burnham, Richardson, Yeoman, Johnston, C. Black, Bennett, Campbell, Arnott, Phillips, G. Black, Sidey, Alcorn, Pratt, J. Wade, &c., &c. The Club was favored with the company of Mr. John Barnard, Treasurer to the South Monaghan Agricultural Society. After the minutes of the last meeting had been read,

the reports of the two last meetings were read by Mr. Wade, as they were in connection with the present subject.

Mr. Hume then said :

After the very beautiful essay of our friend Mr. Page, and the very practical one of Mr. Wade, I cannot but feel rather diffident in undertaking the part of the work you have assigned to me ; more particularly as the lighter class of soils have hitherto been in a great measure avoided by our most intelligent practical farmers, and in consequence the amount of experimental information concerning them is in some degree limited.— Having myself, however, been brought extensively in contact with what are called the light soils of our Township, and having also seen much of such lands at home, I shall endeavor to express as briefly as possible the ideas impressed on my mind as to the rotations best to be carried out in their management :

And first I would give in my adhesion to the remark of Mr. Wade—that in the present irregularity of our markets, and deficiency of circulating medium, it is impossible to follow out any rotation based wholly or even mainly, as is the case at home, on the preservation and amelioration of the soil. But with our farmers here, who are generally in much need of ready money, the first motive must ever be the procuring a supply of that article. Perhaps, however, our best course in considering the subject is in its relation to the soil, keeping our eye at the same time over the general profit of the transaction.

In speaking of the light soils of this Township we generally refer then, to the gravels which extend generally along the slopes of the old lake beach, or to the range of table land stretching northward from that ridge. The former timbered with a pretty thick growth of hard and soft maple, basswood, beech, birch, white and black ash, iron wood, &c. When a second growth takes the place of the trees cut down, pine and white oak show themselves pretty extensively interspersed with hickory, slippery and rock elm, and an undergrowth of thorn, hazel and bramble. The latter clothed with a heavy growth of oak and pine, the one predominating where the subsoil is of a clayey character, the other where it inclines to sand or gravel. The black soils will usually I presume be classed with those of a heavier character, a position which in England would scarcely have been allowed them.

Our gravelly lands then generally lie on the slope of what seems formerly to have been the lake basin, with some of the undulating heights approaching thereto. They mostly consist of three inches to a foot of gravelly loam, reposing on a subsoil of gravel, of whitish clay, mixed with friable limestone, often so compact as to form a hard pan; or more rarely on a reddish yellow clay; in the two latter cases they have usually a tendency to be springy. Large boulder stones, such as Geologists attribute to the action of Icebergs, lie scattered often to an inconvenient extent near the ridge; though the excellence of the soil in such localities is sometimes fully attested by the heavy growth of timber, low eminences of sand too are frequently thrown up by

the action of currents when this district was submerged. Along the slope of this ridge are numerous beautiful perennial springs produced apparently by the singular peculiarities of our other variety of light land, the heights or plains extending to Rice Lake.

These plains are generally speaking covered by 2 to 6 inches of light yellow sandy loam, almost destitute of vegetable matter, except where the action of some streamlet has caused a difference in the character of vegetation. But their peculiarity lies in the subsoil. Up to a recent period this was thought to be very inferior but it is now ascertained to consist in many parts of heavy brown or reddish brown clay, in others of whitish clay mingled with friable limestone and in a small minority of instances as far as my information goes, of sand. I speak of our own Township.

Of the high quality of these clays there can be no manner of doubt, and perhaps I may say nearly as much for the clays intermingled with limestone, for these rarely—as in the lower slopes—degenerate into hard pan, but are usually dry, and this dryness I have found in many cases—perhaps it is general—caused by a peculiar natural drainage, viz., sand wells. We have sand hills on the lower lands, here sand wells. I have picked into a hard subsoil of solid clay and limestone gravel, lying at a depth of six inches and within six feet, have dug down twelve feet without finding a bottom to the pure sand. You may see holes twenty feet in depth and not over six feet in diameter, which have sunk perpendicular as a well, carrying down all the surface growth, whilst scattered around might be found such cavities in various stages of being filled by the growth of trees and the mouldering in of the sides. In other parts again, the slopes around seem to converge into a basin, often almost resembling an old quarry hole, but seemingly with no superficial outlet for the drainage thus drawn towards it. I can only account for these singular phenomena by supposing the sand gradually drawn from beneath by the washing of the fountains of those springs which bubble up so beautifully around the margin of the ridge beneath; but the well like shape and solidity of the sides of these sinks when new, forms a very striking peculiarity.

I am sorry I am no Geologist, but the growth of timber on these plains and the deficiency of vegetable matter, tells us that at a comparatively recent period they have been a barren waste, a peculiarity which we can only conceive caused by their having been submerged up to an epoch not very distant from our own, and probably rather rapidly upheaved by subterranean agency. But talking of the timber on these lands brings us back to our rotations. It is beautiful to see the pine giving way to the soft maple or oak, as the land is lighter or more clayey, then gradually creeping in the maple, white ash, iron wood, beech and all the other denizens of the forest: each, as the ever changing character of the soil adapts it to its growth. We may thus learn how varying is the food of each, and how the very growth of one plant by some indefinite process fits the soil for the reception of another.



Referring then to light soils generally, I find such soils easily exhausted, as much perhaps from the facility with which they give out their energies as from their deficiency in vegetable matter. They are generally open and porous, and this, with the frequent absence of moisture, hastens very much the decay of the organic material in their composition. Such being the case you may expect these soils to be advantaged by stimulating their productive powers and restoring as much as possible the vegetable product to the land, as in the case of pasture, soiling, root crops, hay fed on the premises, &c. The nutritive nature of the soil would be increased, first by the amount of decomposition of mineral substances contained in the soil itself; second by the amount of food gathered by the various plants from the atmosphere, whilst the chemical forces brought into play in these various changes, react again on the ingredients of the soil.

Chemists tell us that organic substances which are the principal constituents of vegetable soils, consist of the combination of a few materials chiefly gasses. The same materials in various proportions form the substance of growing plants, they are taken up largely by the roots, which thus are active agents in the work of decomposition; if hydrogen in large proportion be taken up by the growing plant, carbon, oxygen, or perhaps nitrogen are set at liberty to act on the other components of the soil as well mineral as vegetable. The more foliage the plant exhibits, the larger in general will be the amount of perspiration and evacuation, and of course the greater the force of decomposing power acting on both soil and atmosphere. It is probable also that the powerful agency of plaster and similar manures, is owing to their affinity for some of the ingredients of the soil or air, hastening the progress of decomposition. It follows then that when we wish to impart a greater amount of vegetable matter to the soil, we must make use of plants abounding in leaf and respiratory organs, whilst we may select also manures which will have a tendency to expedite the decomposing process—worms also and minute insects must exert a powerful agency, not only in their mechanical actions but also in the material taken up and given out in the growth of their bodies. Remove the minutest constituent of any organized material, and the whole is resolved again into fresh combinations. How wonderful the influences continually at work on the minutest portion of this earth's surface, on each blade of grass beneath our feet. Truly knowledge is power, when it leads us thus to see our own ignorance, and impels us to press onward in the path of science and of truth, anticipating the time when the knowledge of God in his works, as well as in his word, shall cover the earth as the waters cover the sea.

The character of the mechanical action employed on light soils is also an important consideration, and when the subsoil inclines either to sand or gravel, comparatively little of a pulverizing or opening agency is required. When however the stiff clay subsoil, requires to be worked unto the supersoil of sandy loam, a frequent action of the plough, and repeated exposure

to the influence of sun and frost seems necessary. As to the question of drainage, were any amount of water is retained in the soil, it seems absolutely necessary for the efficient carrying out of every rotation; though perhaps in this country a thorough system of drainage is, at present, impracticable. But there is a view of drainage not often taken, which would lead us to expect advantage from it even on comparatively dry soils, any drain acts not only as a drawer of water but as a circulator of air, affording food to the roots of plants, and hastening also the decomposing process going on continually in the soil. Reviewing the matter then, it appears that in considering the adoption of a rotation on the light soils of our Township, we may divide them into two classes, according to their subsoils: first those in which sand and gravel predominate, second those where the subsoil is exclusively of a clayey character. In the former an extensive growth of green crop, to be returned to the soil is required, attended with diminished mechanical action or ploughing and exposure to the air. These are pasture lands or adapted to pasture, clover, peas, &c., and occasional fall crops of grain, sometimes wheat but oftener, especially in western exposures, rye. The treading of cattle or sheep consolidates the ground—the matted roots of clover with the growth of leaf by crops, taking a large portion of their food from the atmosphere, increases the vegetable mould, and a winter grain crop covering the ground before the doughts of summer, affords a better chance of bulk both in grain and straw, while it excludes from the already—often too dry soil—as well the burning action of a summer's sun, as the pulverizing agency of a winter's frost. If you once attain a good bottom on such lands, they afford a most healthy and nourishing feed to either cattle or sheep, especially young stock.

Again the clay subsoils (though after a number of years they may be well adapted to many of our Spring crops) being generally very dry, are apt to bake and burn when in their crude state: thus spring crops should not be used except those early sown and of a smothering character: as peas, buckwheat, tares, &c.,—ploughing in any of the crops, if necessary, would impart vegetable matter to the soil, and at the same time keep it porous and open to the action of the sun and air.

But the most important consideration in any rotation in light lands is, while growing a large amount of vegetable material, to have a good stock to turn it into manure—you want a full stock of cattle or sheep, but of all things try to have them always in good condition. A few turnips will be of great assistance where much straw has to be consumed, and dung from well-fed hearty cattle, will surely contribute to the same state in your crops: as the manure from a lot of starlings will render your crops barren and unfruitful. It is almost an axiom that when you find a lot of comfortable looking animals in the barn-yard, you will find the fields in harvest with luxuriant crops of golden grain.

Under these circumstances, I should recommend, on the first class of soils, some such rota-

tion as follows, on light, gravelly, or sandy sub-soil when

CLEAN	MIDDLING	DIRTY.
Clover	Clover	Clover
Clover	Clover	Clover
Pasture { Manured & broken up in June	Fallow or Pasture as before	Fallow
Wheat	Wheat	Wheat
Root Crops	Peas	Peas
Barley	Fall Rye	Buckwheat

Whether two or three years' grass is desirable will depend partly on the solidity of the soil.—The last crop of clover ploughed in or manured, or both for wheat. Peas would require plaster and be a full preparation for fall rye, which would be a more certain crop than wheat after peas, particularly in exposed situations. Barley could be taken if a root crop were substituted for peas, the ground being clean; if the land were dirty (as such soil if neglected is apt to become) the late period at which a crop of buckwheat can be sown, allows ample time to work the soil after heat sets in, whilst Stephens tells us, but I have not had the experience, that it is the best crop with which clover can be sown. A rotation for the clay subsoils might be as follows:

WHERE STIFF.	WHERE MORE FREE.
Fallow with Manure	Hoe crops, Fallow—part hoe crop.
Wheat	Barley, Fall wheat— Spring wheat
Clover	Clover, Clover
Pasture	Pasture, Pasture
Peas on Rag Fallow	Fall Rye, Oats, part peas
Oats	

Your hoed crop might be followed with barley; in this case your next white crop would be fall rye, or being followed by wheat, the vegetable matter imparted by two crops of clover, would be a good preparation for oats, whilst the fallow might be well manured. On the stiffer land two crops of grass followed by peas, would bring it into fine tilth for oats. The former list I consider as merely one rotation, varied as you require different crops or according to the state of your soil. The latter for the clay subsoil, is two distinct rotations—one adapted to the stiffer—the other to the more free variety of these lands. In all cases, however, these lighter or barer classes of soils should, as speedily as possible be freed from water, so as to allow both, in their vegetable and mineral constituents a free decomposition, whilst the nutritive matter ought to be studiously increased by the liberal use of both home made and extraneous manures; always bearing in mind that the bulkier the crops you produce, if you make a proper use of that bulk, the richer your land will become. A true definition of a good rotation is a system of cropping, which, while it is ever increasing the produce, is at the same time increasing the productive properties of the soil.

When I reflect on the limited extent to which science, or even a regularly accumulated store of practical facts, has been applied to the elucidation of agriculture, I feel ashamed that the art first born into the world, should be so nearly the last

in information and intelligence. But I do trust a brighter day is dawning upon us. There has been much mawkish sentimentality on the dignity of agricultural pursuits. A Cincinnatus on his little farm! The rich pictures of rural felicity, and the sympathies of our successive races of poets have fostered the feeling. But despite the 'otium cum dignitate' of a Horace, the sweet Bucolics of a Virgil; the glowing description of a Thomson, and the Harkaway of a Somerville, nations have hitherto achieved nationality, most frequently by the oppression, the slaughter and the bloodshed of their fellow creatures. Persian luxury and Attic refinement, alike looked on the masses as an inferior race of beings, and the bulk of the population lived only in degradation and misery. Our own beloved little Island has gained by her commercial enterprise, a name never to be expunged from the history of nations; alas, that even there the colossal capitals attendant on extended manufactures and commercial operations, should chain the mass of the community in deepest slavery at labor's car. It remains for the present generation, for Canadians, for us, gentlemen, to show the world that a nationality can be earned by the peaceful and beneficent pursuits of agriculture — pursuits which, in every profit they throw into the hands of an individual, equally enrich the community.

The mines of California, the gold fields of Australia, may pour in their glittering riches; but it is the grain, the mutton and the beef, the cotton and the wool, with the labour of those who are fed and clothed by them which must ever be the true wealth of a nation.

Mr. Samuel Campbell said, he was very sorry that he did not know much about farming on any soil, and still less upon light soils, as his farm was a very heavy soil; he thought that draining was the first thing to improve a soil, and that it would pay on either heavy or light soils; he had always been been draining on his farm; he put in half a mile last spring; he supposed he had ten miles of drains on his farm; when he began first, he used to fill his drains with wood, but he found that wood was soon decayed, and the frost caused the drains to crumble in, fill, and stop up, so he thought there was nothing for him but tiles; he put in near a mile of tile drains last fall. He did not like summer fallowing as it did not work well with him; the rotation he had adopted was to sow peas on green sod, and after the peas came off, to cross plough lightly and sow fall wheat after the wheat he took a hoe crop, (hoe crop, includes Indian corn, potatoes, turnips, ca. roots, mangold wurtzel, beets, &c.) then sowed spring wheat, then in spring he ploughed and sowed oats with clover; his rotation stood thus:—1st, peas; 2nd, fall wheat; 3rd, hoe crop; 4th, spring wheat; 5th oats with clover; then 6th, hay; 7th, pasture. He found in cross ploughing after the spring wheat, that his land turned up clean and mellow; he found that the earlier he got his clover seeds sown they did the better; he thought that barley was best to seed down with. He tried last spring, the following plan: he took an eight acre field, and on six acres of it he planted potatoes and corn—put three rows of corn, then



three of potatoes alternately over the piece—the other two acres he put in carrots, and he had from the piece, 1510 bushels carrots, 180 bushels corn, and 900 bushels potatoes—the drills lay north and south as the plan succeeded well with him, he mentioned it that his brother farmers might try it.

Mr. A McIntosh, Cold Springs, said he was best acquainted with light soils, as his farm was what is called light land; the system he had adopted was something like this: he ploughed over his green sod in the spring, and sowed oats on it, then after the oats he took a crop of peas, after the peas, then fall wheat, then manured well and took a hoe crop, after that spring wheat and seeded down with clover, cut the clover for hay two years and pastured the third, and then commenced his rotation again. He had as an experiment some years ago sown Fife wheat, Club wheat, Black Sea wheat and the old Siberian wheat, all in the same field, the result was that the Siberian proved almost a total failure, the Black Sea wheat very bad, the Club was better, but the Fife wheat was much the best—the land was a yellow loam with a clay subsoil.

Mr. David Black, Baltimore, said that they could hardly keep to a proper rotation in his neighbourhood, as their clover was very apt to kill out; last year he thought the warm dry weather had greatly damaged their young clover; he could scarcely say that he had adopted any regular rotation of crops, but he thought the following did best with him;—1st to break up green sod and summer fallow it, and sow it with fall wheat, and then take a hoe and green crop and manure, then spring wheat or oats and seed down with clover seed (as barley did not do well on their light soils), then cut it for hay two years and pasture it one year, which made a seven years' rotation. He, one year as an experiment, ploughed in a crop of clover for wheat, he pastured it in spring, and about a month before he intended to plough it, he kept out the cattle and let it grow quite rank; he ploughed it down about the first of July; he then let it lay about six weeks and cross ploughed, and then seed furrowed it; his wheat was badly winter killed that year, but in places where it was not winter killed it was very good.

Mr. John Pratt said the plan he adopted was to sow peas on the green sod; then to sow, after the peas, either spring or fall wheat; then the third year, a hoe and green crop with manure; then the fourth year, barley or spring wheat with clover seeds (he sowed  $5\frac{1}{2}$  pounds of clover seed to the acre); he then let it lay three years—two years for hay and the third for pasture. He drew a great deal of manure from Cobourg, which enabled him to grow a large quantity of roots, principally turnips—he found the manure he drew from town best adapted for turnips. All the manure he drew through winter he applied to his root crops in spring; what he drew through summer he applied to his pea stubble for wheat in the fall. He always let it ferment slightly before applying it, as the heating destroyed all noxious weeds, seeds, &c., that might be in the manure. He, last year, put on 200 one horse cart loads of

dung on two and a half acres of turnips, and he thought that the turnip crop would almost pay for the manure, besides the benefit to the land afterwards (he had never paid more than one shilling for a waggon load of dung in the town). He thought that dung ought to be rotted for turnips: last year when sowing his turnips, he fell short of the dung he had drawn from the town, and applied some green from his own barn yard, and the turnips sown on it were not half so good as those sown on the other.

Mr. George Black said he had no experience on light soils in this country; the practice that he pursued on light soils at home, and he would be inclined to try the same here, was a six-course shift: 1st year, oats on green sod; 2nd year, turnips; 3rd year, wheat or barley with clover seeds; the 4th year, hay; 5th and 6th years, pasture. There, soil was so light that it would drift like snow when they were preparing it for turnips, but it had a good clay subsoil; and though it was so light, he had seen the wheat on it taller than he was. They fed off most of their turnips with sheep, which effectually treaded and consolidated the soil. He would prefer rotted dung not too much heated for turnips. Should his dung be likely to over heat, after it was turned over, he would turn on his horses or cattle and tread it well down, which would prevent it from heating too much. He thought manure was best applied to turnips just before sowing; he had tried manuring land for them in the fall, but he did not find it answer well.

Mr. Forsyth said, as he was but lately come to the country, and the farm he was on was a strong clay, he could say nothing about the rotation best adapted to light soils. His practice with manure was to draw it out through the winter, and lay it in a heap, and then apply it to his root crops in the spring; he found what he drew out in winter was well rotted when he came to apply it in spring. Would prefer applying dung to potato land in the fall, but to turnips in the drill at sowing.

At the call of the President, Mr. John Barnard, South Monaghan, said he had often read the reports of our proceedings, and was forcibly struck with them as being in keeping with our character as practical agriculturists. He intended being present at some of our meetings, but he never had an opportunity till to-day, when having seen a public notice of our meeting, he had come to see, not as a teacher, but as a learner. His father farmed a farm of five hundred acres in Yorkshire, England (on which he was brought up) which he believed was principally light land. He believed their practice was different from ours—at least from any he had heard mentioned to-day—but as he was young when he left he could not distinctly remember it, so that he could not go fully into it. One thing he distinctly remembered—and he had not even heard it mentioned to-day—was, that on all their light soils they used what they called a *presser*, which they found highly beneficial for wheat, as it made the land solid and brought the wheat up in drills. Another thing which he thought well adapted to light soil here, and of which he had heard very little to day, was Indian

corn. Our neighbours on the other side of the Lake raised large quantities of it on their light soils, and he believed they were not overly fond of hard work. The Society with which he was connected got on middling well: he hoped they would be able to do better by and by. Though but a handful they kept together. They paid ten shillings each last year to keep up their Society; but since the amount for townships had been lowered by the new Act, they paid five shillings each this year. Their Society had two good Durham Bulls, and considerable balance in hand besides.

Mr. Musson said, that as the gentlemen that preceded him had spoken so much and so well he would be brief. As Mr. Wade had been very inquisitive about manure, he would begin with that. When he came to this country, he used to draw it out quite early when he had to dig it from the frost, but he found that when he came to apply it, it was quite cold and did not do well. When dung was applied fresh from the yard to turnips, he found it, when he came to plough the land afterwards, quite hard *caked*—rather, he thought, preventing nourishment getting to the root of the turnip than nourishing it as it ought. His present practice was to turn over his dung in the spring, then let it lie five or six weeks, and turn it right into the turnip drill. This plan he found answered very well. He would prefer all his dung fermented. Some parts of Mr. Hume's Essay he did not like, and other parts he thought very good. He objected to buckwheat, as there was no getting it out of the land. He had seen it come up on the land after it had been well summer fallowed. He would as soon have thistles or charlock on his land as buckwheat. Every farmer ought to know what kind of crop was most suitable to his own land. Were he cultivating light land in this country, his plan would be to break up green sod and plant it with Indian corn, then he would the second year sow spring wheat with manure, then the third year oats or barley with clover seed, then the fourth year he would take a crop of clover seed and let it lie one or two years in pasture, and commence again with Indian corn.

Mr. John Wade said, his plan with manure was different from any that he had heard. He applied his manure to turnips fresh from the stables, and he had always had as good crops as any in the neighbourhood.

It was moved by Mr. A. Alcorn, seconded by Mr. J. Wade, that a vote of thanks be given to Mr. Hume for his excellent opening.

It was moved by Mr. Samuel Campbell, seconded by Mr. G. Black, that the next meeting be held at Mackintosh's Inn, Cold Springs, on the last Saturday of March, at twelve o'clock noon, and the subject for discussion to be Agricultural Education. Mr. John Wade to introduce the subject.

WALTER RIDDELL,  
Secretary.

The accounts from all the Spain provinces agree in stating that there has never been known so great a fall of snow as this winter.

## THE PROFESSORSHIP OF AGRICULTURE.

The following notices of Professor Buckland's lectures are taken from a City cotemporary; they were contributed, we believe, by one of the members of the Agricultural class, and will probably be perused with interest by a considerable number of the readers of this journal.

To enlarge upon the importance of agricultural pursuits, would be merely to give utterance to common place truisms. Man may exist without many of the arts of life, but without the cultivation of the earth he could not live, except as a *ovine* herdman or shepherd, depending upon the spontaneous productions of the earth, and the produce of his flocks and herds; or as a savage, depending altogether upon the fruits of the chase. Even savage tribes have felt the necessity of cultivating the ground to add to their means of subsistence. The Indians of North and South America, before the invasion of these continents by Europeans, cultivated and harvested the maize and a few other plants in a rude way. And the wild tribes of Asia and Africa have followed the culture of the earth, to a greater or less extent. In Canada the importance of the calling is admitted on all hands. Canada is for the present, and must for a long time be, essentially an agricultural country. Four-fifths at least of our population, are directly engaged in the cultivation of the soil; and of the remaining one-fifth, a large number, as the country tradesmen and mechanics, are directly dependent upon their relations with the farmers of the country for occupation and support. In fact, nearly our whole population may be said to be directly dependent upon the profits and the success of agriculture. Nearly our whole trade and commerce, our manufactures and our internal and public improvements, are based upon it.

The importance of the subject being then admitted, how necessary it is for our practical farmers to have facilities for acquiring the knowledge how to obtain the largest and most valuable amount of produce from the earth at the least expense, and with the smallest possible—or rather we should say, without any deterioration of the soil? How interesting to the country gentleman of liberal means, or to the student having leisure, to have facilities at hand for the study of this beautiful science, which opens up so many of the mysteries of nature, and is so intimately connected with many of the other arts and sciences of the present day.

### DIFFICULTIES TO BE OVERCOME.

We have been led to these remarks, from the circumstance, not so widely known or appreciated as it should be, that Professor Buckland, of Toronto University, is at present, and has been for some weeks past, delivering an able course of Lectures upon this noble art. Mr. Buckland had a difficult task before him. From a variety of causes, which appear almost unaccountable at first sight, but yet which may be philosophically explained, there has always been a remarkable apathy shown towards the study and improvement of this art, and where Agricultural Chairs



have been heretofore established, the getting up of the classes has been, at first up-hill work. One of the most celebrated Professors commenced with a class of only five, and it was some time before he succeeded in awakening such an interest in the science as to draw together a large class of students. Mr. Buckland stated at the commencement of his course of lectures, that if he could succeed in the first session in awakening such a spirit of enquiry as would lead his class and others, to take a lively interest in the matter, and to read and seek to acquire information for themselves, he would feel that his labor had not been in vain. This, we believe, he has succeeded in doing already. He commenced with a class of six gentlemen, residing in the vicinity of Toronto, and all directly interested in agricultural pursuits, to whom he lectures twice a week, and another and larger class of students attending educational institutions in the city, to whom, we believe he lectures once a week. The Lectures have been, so far, exceedingly interesting, and have, by incidental digressions, naturally connected with or suggested by the subject, entered upon fields of enquiry in science, or offered glances at the past history of arts, sciences, and of mankind, of a most valuable and interesting kind.

Mr. Buckland commenced his series by taking a brief general view of the importance of the subject, man's absolute dependence upon it, the happiness and independence of the farmer's life, the influence that the pursuit has upon the mind as tending to the establishment of religious feeling and to the conservatism of social and political institutions, and as tending to patriotism and attachment to his country; the influence upon the physical functions, as tending to health and strength, and the preservation of the vigor, and physical as well as mental constitution of the human race, &c.

#### HISTORY OF ANCIENT AGRICULTURE.

The Professor then proceeded to give a brief retrospective view of the history of the art, its first institution, coeval with the birth of mankind: Adam was put in the Garden of Eden, to dress it and keep it, Cain was a tiller of the earth, and Abel was a keeper of sheep." He traced the progress of agriculture from the earliest ages down to the present time, showing that the problem of obtaining subsistence from the earth had given an influence to the political institutions of countries, had tended to disperse the human race over the face of the earth, and had given birth collaterally to many of the more liberal and abstract sciences, in illustration of which he cited, among other things, the circumstances connected with the periodical inundation of the fruitful valley of the Nile.—After these inundations, as all landmarks were effaced, it was necessary to devise some means of ascertaining the quantity and description of land which each person had been in possession of before the inundation. Hence arose the science of Geometry, in which the Egyptians were the earliest masters. The position of the Heavenly bodies was brought into account to aid in these calculations; hence, also the science of Astronomy, &c. We cannot trace

in this brief sketch all the ground gone over by the learned Professor. We give merely a few points, in order to show the interesting nature of the lectures, upon what might, at first sight, appear as a dry and unpromising subject.

In treating of the Agriculture of the ancients, he showed that the idea, that many of the systems or modes of cultivation in use at the present day are altogether new discoveries, is to a great extent a mistake. He showed from fair deductions, that even before the Deluge, Agriculture must have made no mean advance, in order to sustain the large population, which, from moderate calculations, must have existed upon the earth at that period. From thence he went to the Agriculture of the Egyptians, that country which was the cradle of early science. He showed from well grounded deductions, and from ancient writings, that in that country the art had made no mean progress. From thence it spread to Greece, to Judea, to Italy, and other parts of the world. He showed by passages from the early Greek and Roman writers, that many important matters connected with the practical culture of the earth, and which have been very generally supposed to be recent inventions and improvements, were in fact, known and practiced by the ancients, and that many of these important facts, though lost sight of for ages, and within the last century or two produced as new inventions or discoveries, were in fact only rediscoveries. And so of the Agriculture of the East; India and China, and other countries. The customs of these countries are believed to have been nearly in a stationary condition for many centuries, and yet their agriculture was in many points good, and would compare not unfavorably with the system in Europe till a recent period. The Chinese, in many points, were not behind us at the present day, as they practiced the system of manuring and irrigation in perfection, and obtained an astonishing amount of produce from a given extent of ground.

In illustration of the knowledge of Agriculture possessed by the ancients, and by the inhabitants of countries at a more recent period, who could have derived no aid from European improvement, it was stated that the Egyptians knew the value of and practiced artificial irrigation, in addition to the natural overflow of the Nile. The state of the Art among the Greeks was shown, as described by ancient authorities, as Herodotus and others—and the Agriculture of the Jews, as deducible from incidental allusions in the Bible. It was shown from the writings of Pliny, Virgil, and other Roman writers, that that people had carried the Art to a tolerable state of perfection, that they understood the value of and practiced drainage, rotation of crops, manuring, &c., and that they had different systems of tillage, adapted to the different varieties of soils.

Even some of the inhabitants of this Continent, as for instance the Peruvians, had several features in their system of tillage which have been marked as among the improvements of later days. The Peruvians practiced irrigation on, an extensive scale, before the discovery of the Continent by the Spaniards, and there were public works

constructed by the then Sovereigns or Incas of the Country for that purpose. These Sovereigns patronized and honored Agriculture, and set an example of industry to their subjects, by every year performing the public ceremony of digging a piece of ground with their own hands.

Though we are not prepared to quote any of the particular passages cited by the worthy Professor in support of his views from ancient writers, yet the following translation of passages from that beautiful poem, the *Georgics* of Virgil, will give a fair idea of the amount of Agricultural knowledge possessed by the Romans. The skilful Agriculturist will readily perceive that some of the ideas are not according to the most scientific principles of the present day, yet the poem on the whole, describes a state of farming not much behind many parts of Great Britain till within a very recent period, and probably not behind some portions of Europe at the present day. Virgil says in the first Book of the *Georgics* :—

"In early spring when the melted snows glide down the hoary hills, and the crumbling glebe unbinds itself by the Zephyr, then let my steer begin to groan under the deep pressed plough, and the share worn on the furrow begin to glitter. That field at last answers the wishes of the covetous farmer, which twice hath felt the summer's sun and twice the clouds of winter; immense harvests even burst his barns. But before we cut an unknown plain with the ploughshare, let it be our care previously to learn the winds, and the various quality of the climate, the ways of culture practiced by our forefathers, and the genius and habits of the soil; what each country is apt to produce and what to refuse. Here corn, there grapes, more happily grow, nurseries of trees elsewhere, and herbs, spontaneous bloom. Do you not see how Timolus sends us saffron odours, India ivory, the soft Sabceans their frankincense? But the naked Chalybes send steel. Pontus strong-cented castor, Epirus the prime of the Olympic mares.

"These laws and external regulations nature from the beginning imposed on certain places; when Deucalion first threw those stones into the unpeopled world, whence men, a hardy race, sprang up. Come then, let your sturdy steers turn up a soil that is rich forthwith, for the first month of the year; and let the dusty summer bake the scattered clods with suns mature and vigorous. But if the land be not fertile, it will be sufficient to raise it up with a light furrow, even so late as towards the rising of Arcturus. In the former case, lest weeds obstruct the joyous corn; in the latter, lest the scanty moisture forsake the barren sandy soil.

"You will likewise suffer your lands after reaping to rest every other year, and the field to harden and overgrow with moss, or, changing the season, you will sow there yellow wheat, whence before you have taken up a joyful crop of pulse, with rattling pods, or the vetches slender offspring, and the bitter lupines' brittle stalks and rustling grove. For a crop of flax burns the land, as also oats, and poppies impregnated with Lethæan sleep. But yet your labor will be easy,

even though you should sow those kinds of grain every other year, provided you be not backward to saturate the parched soil with rich dung, or scatter sordid ashes upon the exhausted lands, thus too, with this precaution, your land will rest merely by changing the grain. In the meantime, should your field remain untilled for one year it will not be ungrateful.

"Often too, it has been of use to set fire to barren lands, and burn light stubble in crackling flames; whether the land thence receives secret strength and rich nourishment, as with land that is poor, or whether every vicious disposition is exhorted by the fire, and the superfluous moisture sweats off, as happens if the soil be watery, or whether the heat opens more passages, and secret pores, through which the sap may be derived into the new born herbs, which is the case with the stiff clay, or whether it hardens more and binds the gaping veins, as happens to a spongy soil; that the small showers, or keen influence of the violent sun, or penetrating cold of Boreas may not hurt it.

"He too greatly improves the land, who breaks the sluggish clods with harrows, and drags osier hurdles over them, (nor does yellow Ceres view him with an unpropitious eye from high Olympus), and he also, who after the plain has once been torn again breaks through the land; that raises up its ridges, and gives it a second furrow, turning the plough across, and gives it frequent exercise, and rules his lands imperiously.

"Pray, ye swains for moist summers and serene winters. In winter's dust most joyful is the corn, joyful is the field. This improves the fertile Mysia more than all her culture, and hence even Gargarus admires his harvest.

"Why should I speak of him, who immediately after sowing the seed, persecutes the land anew, and levels the heaps of barren sand; then on the springing corn drives the stream and ductile rills? and when the field is scorched with raging heat, the herbs all dying, lo! from the brow of a hilly tract he decoys the torrent: which falling down the smooth worn rocks, awakes the hoarse murmur, and with gurgling streams allays the thirsty lands," &c., &c.

Here in the above passages we find Virgil alluding, with poetical embellishments, to several of the features in modern agriculture. He hints at the adaptation of the plant to the soil and climate, to vigorous and thorough tillage to the fallow, to manuring, to rotation or alternation of crops; in other parts of the work he describes the value of clover, beans, &c., as alternating crops, in fact, pictures the very system of alternation in vogue in some parts of England at present. He also alludes here to the system of clay burning, much in use on stiff soils at present; to frequent and thorough tillage, and to irrigation—almost considered as a recent discovery, and of the value of which, indeed, or even of the mode of performing it, many farmers of the present day are quite ignorant. In other parts of the poem, Virgil gives minute directions for cultivating the different kinds of grain and fruit trees, pruning the latter, &c., steeping seeds in various preparations, as of nitre, &c. He treats of the breeding and management of cattle, the cultivation of the vine,



the management of bees, &c. In fact the whole book gives us a charming picture of rural husbandry, and shows that the progress in agriculture, at that time, must have been very good indeed.

**SLOW PROGRESS OF AGRICULTURE, COMPARED WITH OTHER ARTS.**

In our last notices of these interesting lectures, we sketched briefly the course followed by the Professor in introducing the subject, and in describing the progress of the art among the nations of antiquity. In this we were compelled necessarily to omit many interesting topics and illustrations, introduced by the lecturer, as connected more or less intimately with the subject.

Passing from this branch of the subject, the Professor next sketched briefly the progress of the art among European nations during the Christian era, tracing it rapidly through the period commonly called the dark ages, when the art was probably in a stationary or retrograde position, and of which period we possess very meagre accounts—down to a period of two or three hundred years back, when a spirit of improvement in culture and agricultural machinery first began to arise. From this period he enlarged more upon the progress of improvement, and upon the history of agricultural literature and experiments.

In following the course taken by the lecturer, we shall confine ourselves more particularly and very briefly to the history and the progress of the art in the British Islands. And such an enquiry is not altogether without practical value, as it may show what circumstances have led to a true knowledge of the laws governing vegetable and animal physiology, and by what labour and perseverance, and sacrifices, these truths have been arrived at.

The progress of agriculture in all ages in comparison with that of the mechanical and scientific arts has been slow. But when we examine the reasons for this, the circumstance is not at all to be wondered at. The manufacturer or artisan can conduct his labor or experiments, under his own immediate eye, or with his own hands. He may have his machinery, and the material he operates upon, all enclosed under a single building, and in an artificial temperature, which he can control to suit his purpose. He works upon understood mechanical or mathematical rules. He can bring his labors to a conclusion in a short time and when he has arrived at a certain result, he knows that the same operations, conducted with the same materials, and under the same circumstances will always produce precisely the same result.

But with the agriculturist the case is widely different. Before the acquisitions of science, he had as it were to work in the dark. He did not know the qualities of the soil he had to work upon. He had to labor with defective machinery to govern his operations, (and very often with limited knowledge upon the subject,) according to all the peculiarities of climate, subject to the thousand vicissitudes of wind, sun, and weather. A whole year was required to bring his experiments to a conclusion, and when a successful result was by chance arrived at, if the cultivator

fancied he had now discovered the true course to be followed, he repeated the experiment; then possibly, from causes he was totally unacquainted with, from some hidden property of the soil, from some minute detail in the mode of operation, which had escaped his observation, or from some unpropitiousness in the season, he found his repetition a total failure, and all his calculations were thrown aback.

It is thus that the progress of this art has ever been slow. It requires the accumulated experience and observation of many years to arrive with certainty, perhaps at the knowledge of a single truth. Another cause of slow progress, is the necessary isolation in which the very nature of the employment compels farmers to live, they cannot communicate with one another and co-operate so readily for mutual benefit as those who reside in towns and villages, and accustomed more to the communion of their own thoughts, and to read the book of nature as written in the leaves and fibres of trees and plants, in the habits of the animal creation, and in the varying skies of summer and winter, than to intercourse with their fellow men, they do not acquire the same facility or disposition to impart their ideas to others, as those who are in the habit of meeting more frequently together.

All thanks then are due to those benefactors of mankind, who by laborious investigation, and perseverance in experimenting and searching after truth, and too often at great personal sacrifices, have succeeded in placing the world in possession of the facts, by which agriculture has arrived at its present state of progress. The same devoted labour and perseverance, may possibly hereafter yet bring to light new facts, or help to clear up mysteries, which have not been satisfactorily explained.

**HEREFORDS vs. SHORT HORNS.**

(For the Canadian Agriculturist.)

Piffard, Livingston Co., N.Y., March 15, 1853.

DEAR SIR,—I was glad to see the name of Hon. Adam Fergusson attached to an article on Short Horns, and was much pleased with his usual gentlemanly style and "straightforward" manner of treating the subject, and duly appreciate the conduct of his worthy friend, Mr. Vail, of Troy. A breeder should be liberal in such a dilemma. We are all too apt to make exalted statements, but however eager we may be to impress our *own opinions* on the minds of others or controvert those of our opponents, the truth must ultimately prevail, and whatever is based on error is utterly worthless. Most breeders believe their own stock "*best*," and generally extol those with whose good qualities they are most familiar. Hence an impartial trial should be made.

My *complaint* in this matter is, that Short Horn men claim "*first class*," without having

gained an honorable title to it; nor have they shown any *just disposition to prove their claim*, having had various opportunities to do so by Hereford breeders in each country. Had they been *confident* of their superiority, they certainly would have accepted. Again; I have frequently seen animals in said "*first class*," take first prizes, with "*hollow crops*," *very large paunch*, *enormous bone*, loaded with "*flabby flesh*," which in my opinion are four of the greatest evils that can enter a breeder's herd, and when brought under the inspection of a *judge* skilful in his profession, would be justly condemned. I consider this subject a very important one, and if not more closely observed, will be very injurious to all societies. The best breeders will cease to show. This has induced me to write *unceremoniously* against such kind of judges. I may not have been very "*courteous*," but I contend I have written the "*truth* and nothing but the *truth*," and should like to see it established as the breeders' motto. He who breeds bulls for public sale, and sends from his herd a grade for *pure*, is an enemy to his stock, himself, and his country. A transaction of this kind can never be concealed, for his progeny will be certain to detect it.

It is the opinion of Mr. Fergusson that Short Horns are the most profitable "for all purposes." My opinion is that Herefords claim this. Mr. Fergusson's cow weighed 1992 lbs., live weight. My Hereford cow weighed 2313 lbs.; her dead weight was not given, but I never saw one that would sink less offal. She was perfect in her symmetry, and her quality of meat could not be surpassed. Mr. F. is in possession of "Mr. Bate's professional secrets." I have been intimate with some of the best breeders England can boast of, "*names*," if necessary. So far Mr. Fergusson and I stand on equal footing, and I glory in our mutuality, more especially when it is a person I so highly esteem; nor have I any fear of "*bickering or squabbling*," with him.

Now I have a proposition to make, which I hope will be accepted with good feeling by "*the best*" Short Horn breeders. I will place my *untried* heifer "Dairy Mail," 2 years old, dropped May 18th, 1851,—will calve in July; also, "*Bright Eye*," dropped April 23rd, 1851,—will calve in June; both equally "*pure pedigrees*," descended from English Hereford Herd Book stock, and shall be given with them, against any two Short Horns of the same age, produced by one breeder in Canada, the time of trial shall be two, three,

or more years, as may be agreed upon by the Executive Committee of the Provincial Agricultural Society. All shall be weighed when put on trial; the food, milk and butter weighed, as the experiment proceeds. They shall be shown each year at your animal Show, their quality, symmetry, &c., shall be judged, by competent judges, appointed by the Society, and again weighed at the end of the trial. If I am fairly beaten, Short Horn men may have my consent to show in "*first class*" I do not advance this with any *prejudice* against Short Horns, for I think the "*very best*," beautiful animals. I make this offer to place them *in juxtaposition* with "*first class*." The Society should appoint the person to take charge, and pay him liberally for his *responsibility*; it would be the *best* and most *satisfactory* trial they could make. I will deliver these Heifers into the care of the person named, by order of the President of your Society, whenever called for; and will give an affidavit that neither has had a particle of meal in their lives, to my knowledge.

I should like if practicable to have the Heifers in the neighborhood of Baron De Longueuil's bull, Climax, and I would take the calves away each year, as soon as dropped.

I am, dear Sir, yours, &c.,

WM. H. SOTHAM.

P.S.—I am happy to say I imported the Short Horn cow, *Wildame*, the dam of the heifer purchased by Mr. Fergusson at Mr. Vail's sale. She is highly bred, and one of the "*right sort of Short Horns*." I shall be pleased to give him any information respecting her, which I assure him will not injure his herd.

[We publish the above letter, although it contains little but what Mr. Sotham has written before in this Journal. If individuals, or Societies would incur the trouble and expense of such a test as Mr. S. proposes, the result as far as it went, would no doubt be interesting; but the *main question* would, in our opinion, be as far as ever from being settled. To regard that settlement as depending upon a comparative trial, however long and carefully conducted, between two specimens of each breed, is simply delusive; it would be drawing from the most slender premises, a sweeping conclusion, with a vengeance! We beg to submit a far more reliable and satisfactory plan, viz.: the encouragement of the diffusion of the best blood of both Short Horns and Herefords as widely as possible; and when large numbers of farmers have had practical experience of both, *they* will be able to say, and



their preference will show, which breed, upon the whole, is best adapted to the climate, pastures and markets of the country. But little confidence can be placed in mere isolated trials, for such a purpose; a much wider range of experiments is required for the solution of questions of this nature.]—EDITOR.

MURRAIN IN CATTLE.

Harwich, March 17th, 1853.

*To the Editor of the Canadian Agriculturist.*

SIR,—Having lost, within the last few months, a cow and two two-year-old heifers in calf, from murrain, or red water, it induced me to search for the cause and a means of prevention of the disease. I found, upon carefully examining the animals, that there was a mass of inflammation, including the stomach, liver, bowels, apron, bladder, and more particularly the kidneys, with a number of matted cakes in the folds of the stomach. As for the cure of the disease, it is in general too late when first found out, so I shall go on to the means of prevention and the first cause of the disease. A large quantity of the land in this section is low and rich, with rank vegetation, and in the dry summer season but little water, except from wells. I am perfectly satisfied that water in ponds where cattle have access, and made foul by their dung and urine, will cause acidity of the stomach and indigestion; as likewise coarse food in the winter, without any roots, will cause weakness of the stomach, and indigestion, colds, &c.

My idea is this, that a variety of agents, and foul water in particular, cause much *acidity of the stomach* and indigestion, which is the first cause of murrain; in fact, the animal becomes bilious. Therefore, if we constantly correct the tendency to acidity by giving a portion of saleratus or other alkali with the salt, when the cattle are salted, we shall in most cases prevent the disease; and when ponds are necessary, to pump the water into a trough would be advisable. I have lived in this part of the Province seven years; every year a number of cattle have died around me from murrain, but I lost none until this year: for six years my cattle had access to a pond adjoining a large pile of ashes, which gradually leached into it; the seventh year they were shut out from the pond, and three died. Comment is useless.

Yours respectfully,

A CONSTANT READER.

JOURNAL OF PLOUGHS.

*To the Editor of the Canadian Agriculturist.*

DEAR SIR,—In reading the Address of Angus Cameron, Esq., published in the February No. of the *Agriculturist*, I was much pleased with the able manner in which he brought the subject of ploughing before the public, as well as the way that ploughs are now generally made; many of which that get prizes at our Exhibitions, were they subjected to such a test as Mr. Cameron suggests, would come far short of what they profess to be. I fully agree with him in saying, that until a plough is judged in this way it cannot give general satisfaction. Now, it is a well known fact, that many farmers are good judges of ploughing, and yet know little or nothing of the draught of a plough. I think it would be more satisfactory, both to farmers and plough-makers, to have the ploughs tried at the Provincial Exhibitions, &c., at different depths—say to turn a furrow slice, 6×9 and 7×10 respectively; for many ploughs, that can do good work at the former depth, would at the latter break their furrow all to pieces. So, Mr. Editor, I propose less filing and more ploughing.

LOTHIAN.

Hamilton Township, March 3, 1853.

CLOVER AS A PREPARATION FOR WHEAT.

London, C.W., 25th March, 1853.

*To the Editor of the Agriculturist:*

SIR,—Being a young farmer, and not much experienced in the pursuit, but entertaining the opinion that *Red Clover* sown on ground intended for fall wheat, pastured during the summer, and turned under, say about 1st Sept., would be a good method of preparing the soil for wheat—and not having seen it tried in this part of the country, I feel somewhat timid about trying it, without the opinion of more experienced persons; and, therefore, would be glad to have your opinion with regard to it, if you will be kind enough to give your views on the subject in the next *Agriculturist*. And I beg you will pardon the liberty I have thus taken by addressing you.

Your most obt. servant,

A SUBSCRIBER.

N.B.—The soil is rich and black, mixed with loam and clay, on clay bottom about 8 to 12 inches from the surface.

P.S.—I observe in the *Farmer's Guide*, by H. Stephens, vol. 1, page 617, par. 2612, that the author recommends harrowing winter wheat in

the spring. What do you think about such treatment in this country?

#### REMARKS.

A clover ley, when the soil is sound, clean, and in good heart is considered by many farmers, both here and in the old country, as a suitable preliminary for winter wheat. We are not quite sure whether we thoroughly understand our Correspondent. He means, we presume, that the clover should be sown, at least, the year previous to the pasturing and ploughing. After the feeding of cattle a considerable amount of vegetable matter in the shape of stems, leaves, and roots, will remain, which when well incorporated with the soil, tends to increase its fertilizing power. A difficulty in this country is often experienced—especially on heavy lands,—in covering sufficiently a green crop, owing to the hardness of the ground, in August and September. A green crop for manure, ought to be uniformly covered by the acts of plowing and harrowing. It sometimes happens that wheat after clover is more liable to wire worm and other injurious insects, than when preceded by a fallow, or a fallow crop. Our Correspondent had better satisfy himself on the point by making a trial.

With respect to the harrowing of wheat in spring, much depends on the state of the surface soil, the vigour and thickness of the plant, and even of the weather. On light, spongy soils, much loosened by the frost, the action of the harrow would not be beneficial; a heavy rolling, when the land is sufficiently dry, should be given. On stiff soils, where the surface in the spring is hard and bound, a light harrowing would break the crust, and allow the air, warmth and moisture, more rapidly to reach the roots of the young plants, thereby materially aiding their growth. Upon this principle—the frequent stirring of the soil—the efficacy of the horse-hoeing husbandry mainly depends.

#### "FARMING AND GARDENING MADE EASY."

MR. EDITOR:—The above is the title of a little work of forty pages, which has lately been published by Mr. Leonard G. Jones, a practical Farmer and Gardener. A certificate is prefixed to the work from several persons in or near Dundas, testifying to the success of Mr. Jones' methods of cultivation, and to the excellence of his plan for destroying thistles.

Any addition to the literature of farming and horticulture, by one thoroughly acquainted with the peculiarities of our country and climate, must

always be received with congratulation, as we may naturally expect from a practical man various valuable hints, which we might not find in those works more particularly adapted to the peculiarities of Europe or the varying climates of the States.

We were the more induced to believe that the work before us must contain some valuable information—which might, perhaps, more profitably, be made the subject of a patent—from the fact of the book being sold at the enormous price of one dollar. On a careful perusal, however, we find ourselves lamentably disappointed, and feel tempted to apply to the present production the old adage, "That the good in it is not new, and the new is not good."

Among the novelties may be mentioned the author's method of proving the vitality of seeds, viz.: "By boiling them in water for twenty minutes, when it is stated that if sound some will sprout from one-sixteenth to one-eighth of an inch, while others will only swell and sprout a little." That seeds thus treated will swell is perfectly well known, but that they should sprout is something quite incomprehensible, when we consider that one minute's boiling is sufficient to destroy vitality entirely. The old, and the only reliable plan, is to sow a certain number of seeds and notice what per centage comes up.

In the next chapter our author states that, "Seeds imported from foreign countries should be put into tin or air-tight boxes, and hermetically sealed"; a process which has long since been proved, and is well known to be the very worst that can possibly be adopted, the greater portion of the seeds rotting and losing their vitality. It is a fact well known to our large seedsmen, that seeds packed in loose bags and then in common casks, arrive in this country perfectly sound.

The author's plan for raising onions is perfection, viz.: "By covering the ground with boards and sowing the seeds in furrows between them," is certainly novel and ingenious; there can be no doubt that the ground would thus be kept moist and free from weeds, but we very much doubt whether any market-gardener would be inclined to adopt a process requiring for half an acre of onions, eighteen thousand feet of lumber.

We have usually been in the habit of employing such simple and economical substances as soot and ashes, in order to prevent the ravages of the turnip-fly, but our author proposes to attain this desirable object by the cheap addition of an "equal weight of ground black pepper," or by "soaking the seeds in oil of amber," or by "late sowing"; of which processes the latter can surely not be considered as anything new. Furthermore, he recommends sowing with cabbage or turnip seed some lettuce, because he has never seen the fly attack lettuce; we confess ourselves at a loss to understand the philosophy of this proposition; we certainly have heard of growing radishes with the cabbage in order to let these pestilent insects eat the former, but if they decline to eat lettuce, we scarcely see what object there can be in sowing it, unless to cause the entire destruction of the cabbage crop.



Our author's plan for preventing the shanking of cabbage, and for causing good heads upon those plants which seem inclined to grow to stalk, is equally faulty both in theory and practice. He recommends making a slit in the stalk and inserting a piece of wood, when, as he states, good sound heads will be produced. It is perfectly well known that this condition of the plant arises from an imperfection in the seed, the parent plant having become impregnated with some other than the true cabbage, such for instance as rape, and the best culture in the world will not raise good cabbages from bastard seed.

The plan proposed by Mr. Jones for raising new varieties of potatoes is one which we should not have expected at the present day, when the true methods are so well understood among our practical horticulturists. He recommends fastening together the half tubes of two different kinds of potatoes, and prognosticates a different variety from such process. It is scarcely necessary to observe that the whole proposition is an utter absurdity; our author must entertain but a poor idea of the knowledge and understanding of Canadian Gardeners, if he thinks they will give any credit to such arrant nonsense.

It is scarcely necessary to dwell any longer on the purely horticultural discourses of our author, further than to remark that he recommends planting cuttings of gooseberries in August, and prunes his trees every second year, but we will now proceed to discuss some of his Horticultural experiences which certainly seem to be of a very extraordinary kind. We are exceedingly anxious to know in what favored portion of Canada dahlias can be safely planted out by the middle of April; we have generally found the middle of May quite early enough to be secure against frosts. If planted at the time he recommends, in nine cases out of ten they will be utterly destroyed.

In the chapter on planting flowers, he recommends the use of a quarter of a pound of guano, or half a pound of plaster to each gallon of water employed in watering; these quantities would be more than sufficient for a barrel. Furthermore, he informs us that stable and cow-house manure may not be used for flowers, as they will generate large worms, which if the manure be well rotted, we certainly consider as a curious fact (?) in natural history.

But the grand discovery of Mr. Jones, which more particularly evinces his profound knowledge of practical and theoretical horticulture, is the plan for producing colors in tulips and other bulbous roots, as well as in dahlias. We certainly have long been acquainted with this valuable method as handed down from our Great-Great-Grand-Mother, but that such an absurdity should be put into print at the present day, does not argue very favorably for Mr. Jones' idea of the intellectual development of Canada.

The plan is to run a piece of silk of any color through the bulb, and to plant it in this condition, when he assures us the flower will have the color of the silk. If this plan succeeds with bulbs, it surely ought to do so with seeds, and we wonder that our author has not made his fortune by pro-

ducing blue moss roses or scarlet pansies, or red snowballs, problems which have as yet baffled our best gardeners.

The Dublin Horticultural Society long since offered a prize for a blue dahlia, and a bright blue or a jet black tulip would certainly be an acquisition. We hope to see some wonderful productions of that nature at our Horticultural Exhibitions this year.

The process for destroying thistles, upon which Mr. Jones seems rather to pride himself, is certainly one of the very strangest portions of the whole work. He proposes to cover the thistle bed to the depth of half an inch with a mixture of saltpetre, brimstone and salt, and more particularly to kill any stray plants by dropping into the top of each *one drop of spirits of turpentine*. This process strongly reminds us of the plan which was recommended to *Granny* for killing fleas—by means of a peculiar powder—catch the flea and holding it in the left hand, with the forefinger and thumb of the right apply a pinch of the mixture to his nose, when after a few struggles the animal will die! Bless me, says *Granny*, would it not be easier to crack him between your nails?

If Canada thistles be hoed down twice or thrice during the season, cutting well under the surface, they will be as thoroughly eradicated as can be desired, and with considerable less trouble and expense than by Mr. Jones' plan.

There are several other points in this most extraordinary work to which we might allude, but we think sufficient has already been said to prove that Mr. Leonard G. Jones can lay but little claim to his title of *Practical Farmer and Gardener*, and that "*Farming and Gardening made easy*," is by no means a valuable addition to the literature of the present day, the peculiar drift of which seems to be the communication to the million of *correct information*.

#### ANTI-HUMBUG.

#### LIQUID MANURE.

What are we to do with our liquid manure? is a question we have already discussed in a variety of forms, but all tending to show that, except in cases where *irrigation* was practicable, it was not wise nor economical to apply it in the shape of liquid. We well remember the rage there was for tanks and tank-making some twenty years ago—the birth-time of agricultural improvements in this country—and yet we hardly see one of them in proper use at this moment. They are nearly all diverted from their proper purpose; and so unsettled does the question remain, that, after a multitude of essays and papers of great value, the Highland and Agricultural Society of Scotland still presents the same form of heading for a premium on the subject.

We have demonstrated over and over again that the conveyance of water by the liquid manure cart will not repay the cost. The raising and discharge by hose or tubes are processes by far too complicated and expensive for farm purposes, while distribution by steam-power seems still more questionable.

The best remedy seems to be pouring the liquid upon compost heaps, and so, by repeated saturation of the soils of which they are composed, keep up the full supply of manurial matter till the whole of the parts valuable for plants is absorbed and detained by the soil and the decayed matter of which heaps are composed. But even this involves trouble. Besides, the inevitable carting of the waste material, the scraping up, the mixing, the pouring out of the liquid, the watching of the tank, are all operations likely, in a season of active farming life, to be more or less neglected. While, in a wet season, the compost matter will be so liable to be overcharged with wet of one kind or another, that it may not be a willing absorber at all, and the liquid will run off in all directions.

Now we must first consider a little, what we have to do. We have the most valuable parts of the manure—the soluble—washed out from the rest, but in proportions so small, to the water which conveys them, that the liquid as such, is hardly worth the cost of carting, or of removal of any kind.

We have matters, too, both in suspension and solution—some which the water carries mechanically, and some chemically away—and yet there are those who have so often seen applications of the liquid residuum of the farmyard do so little good that they express doubts if it is really valuable.

The researches of Professor Johnston on this head are very instructive. As chemist to the Highland Society, he gave the following as the result of his investigations “On the Composition of Liquid Manure:—

“The liquid manure of our farmyards is now attracting more general attention than at any former period, and tanks for collecting it are in course of erection in various parts of the country. Both theory and experiment show this liquid to be very valuable as a manure, and it has been long known to contain substances fitted in a marked degree to promote the growth of plants. Still, no analyses, so far as I am aware, have hitherto been made of the liquid in the state in which it actually exists in our farmyards, in too many cases running to waste.

“It was with much satisfaction, therefore, that I received a few months ago, two bottles of liquid manure for analysis, from Mr. Houldsworth, of Coltness, near Hamilton, a member of our association. This gentleman had drawn up, for distribution among his tenantry, a very satisfactory and useful statement in regard to the value of this liquid, and the gain which would accrue from saving it. But before circulating this paper, he was desirous of having the actual liquor of which he spoke carefully analyzed, and he therefore forwarded it to the laboratory of the association. The examination has led to some interesting results, which I think deserving of general publication.

“1st. The liquid contained in the first bottle consisted of the drainings from heaps of cow-dung exposed to rain. It was dark coloured, and of course, contained only what rain-water is

capable of washing out of such dung-heaps. It was neutral, but ammonia was given off when it was boiled, or when quicklime was added.

“An imperial gallon of these drainings, when evaporated to dryness, left about 480 grains, or an ounce weight of dry solid matter.

This solid matter consisted of—

	Grains.
Ammonia - - - -	9.6
Organic matter - - -	200.8
Inorganic matter (ash) - -	268.8
	479.2

The inorganic portion consisted of—

	Grains.
Alkaline salts - - - -	207.8
Phosphate of lime and magnesia, with a little phosphate of iron	25.1
Carbonate of lime - - -	18.2
Carbonate of magnesia and loss	4.3
Silica, and a little alumina - -	13.4
	268.8

“From this analysis, it appears that the rain is capable of washing out much valuable matter from common cow-dung. The ammonia is not so large in quantity as in many other forms of liquid manure, because most of those substances voided by the cow which are capable of producing ammonia pass off in its urine. But, on the other hand, the urine of the cow contains no phosphates, while these washings contain a considerable proportion. It thus appears that the washings of the dungheaps contain other valuable substances besides those which are present in the urine.

“Those therefore, who, besides allowing the urine from the byres to run to waste, permit the rain to wash their dung heaps, suffer a double loss; they lose the ammonia-producing substances and much alkaline matter in the urine, and the phosphates with a large additional portion of alkaline matter in the washings.

“2nd. The second liquid consisted of the drainings of farmyard dung when watered with cows' urine. It was also neutral, but gave off ammonia copiously when boiled, or when mixed with quick lime.

“An imperial gallon, when evaporated, left 617½ grains of dry matter, considerably more than the former liquid, and this matter consisted of—

	Grains.
Ammonia - - - -	21.5
Organic matter - - -	77.6
Inorganic matter, or ash - -	518.4
	617.5

“We see here that the relative proportions of organic matter in the two liquids were very different. From ordinary farmyard manure there is as we should expect, less of the organic part dissolved by water than from the finely masticated and digested excretions of the cow.

The inorganic matter contained in this liquid consisted of—



	Grains.
Alkaline salts - - - -	420.4
Phosphates of lime and magnesia	44.5
Carbonate of lime - - -	31.1
Carbonate of magnesia and loss	3.4
Silica, and a little alumina -	19.0
	518.4

"In this liquid, therefore, as in the other, there was a considerable proportion of phosphates, as well as a large amount of alkaline salts. There are no phosphates in the urine; but the fermentation of the dung-heap, caused partly by the watering with the urine, decomposes the straw, and other substances which form the dung-heap, brings a portion of the phosphates they contain into a soluble state, and thus enables them to be washed out by any watery liquid that comes in contact with them.

"The urine of the cow, therefore, which has been thrown upon the dung-heap, will pass off, if it is allowed to escape, richer than it was at first. It may not contain so much ammonia, or of those substances which produce ammonia; but it will carry away more of those inorganic substances which enter into the composition of our crops, and which are no less necessary to their growth."

The above evidence gives, beyond all doubt, the real character of the liquid drainings of the farmyards, and we now come to the possibility of detaining the valuable parts of this manure without the cost of so much carting and attention.

The question, however, is one much broader, and more extensive than as applied to mere fold-yard drainage. It applies to the sewerage of the largest town as well as the smallest farmstead, and the principle is in both cases the same.

The energy and benevolence of Lady Frankland Russell, of Thirkleby, near Thirsk, has settled the question, by the adoption of a detaining apparatus at Aylesbury, which, while it deodorises the water issuing from the drain, and purifies the foul stream, so as to be made fit to drink—it is so clear and beautiful—provides for the detention of the manure without care or watching.

The drainage of a town is just an exaggeration of that of a farmstead. Two tanks are constructed having a connection at the bottom. One tank is filled with pounded clay and the other with peat charcoal. The sewerage water enters the tank filled with clay at the top, filtrating through that substance by its own gravitation, and impregnating it with the denser portion of its impurities; the liquid then ascends through the charcoal tank by hydraulic pressure, where in consequence of the peculiar property of charcoal to absorb and deodorise all impurities, whether of a liquid or gaseous nature, the water finds an exit, at a lower end, of course, than its entrance, in a pure state.

The drainage is thus forced upwards through the peat charcoal by hydraulic power, and through the pounded clay by its gravitative power, and the one and the other deodorise and detain the manuring parts, and allow the water to flow out pure. There are two systems of tanks on each

side of the drain, and the stream is alternately turned into one and the other as they are emptied respectively. It will at once be seen that the force, as well as the saturation, are brought to bear on the detaining influence; and so completely successful is the plan, that we are informed the Aylesbury authorities are about to purchase the whole, put up, as we have seen, at the sole expense of Lady Frankland. Now why should not farmers have similar tanks, to render the manure portable and concentrated, instead of being dissipated through thousands of gallons of water?

It may be remembered that the detailed trials of the Yorkshire Agricultural Society with peat charcoal were not favorable. But the charcoal was not saturated. It was satisfied with liquid manure so far as wetting is concerned, but vast quantities might have been forced through it and come out pure, so that it was a very weak solution.—*Mark Lane Express.*

## MISCELLANY.

### VENTILATION.

The subject of ventilation has from time immemorial, occupied the serious attention of scientific men of all countries, and many are the plans which have been suggested and adopted, to effect so desirable an object for the health of the human race, but it has been left to Canada, to accomplish that which has been the study of ages, and that, too, in our opinion, most effectually. Mr. Sheriff Ruttan, the inventor and patentee of a system of ventilation, will be venerated by ages yet unborn, as the benefactor of mankind, by perfecting a system which is more conducive to the health, than all the dogmas and theories of other, or the present days; and though his views of what constitute the peculiar properties of pure and impure air, may come in contact, and be diametrically opposed to our preconceived notions and ideas, yet time will surmount them, and we hesitate not to give it as our opinion, that his system will at no distant day be properly appreciated by his fellow men. It is well known to all scientific men, that one great difficulty in introducing anything new into the world, is to break down the barrier of prejudice, that is ever erected in opposition to what may be considered an innovation of established principles, more particularly where it requires a philosophic mind to comprehend it, and where the principle sought to be introduced, is at all complicated.

These reflections were caused by a visit made by the writer, to School House No. 3, in this Town, where Mr. Ruttan's system of ventilation has been successfully introduced. The first thing that strikes the visitor upon entering this building, is the pure and bracing air which he inhales within its walls; none of that foul, oppressive heat is felt which generally prevails, upon entering all crowded assemblies, and which is so conducive to head aches, colds, &c., and which lays the foundation of future diseases, and in many cases an early death; and though he may remain for hours, the same healthy atmosphere prevails, and

instead of breathing the same air over and over and over again, fresh air is constantly supplied by this ventilating apparatus.

Mr. Ruttan's system simply consists in introducing pure air into the room, and forcing out that which has performed its functions, or rather which has been once inhaled, and this is accomplished in a way by which the room is kept constantly heated and comfortable. The cold and pure air when introduced, passes over a heated oven, and is sent into the building at a heat varying from 60 to 100 degrees, which can be regulated by the quantity of fire kept in the furnace. Now it must be evident to all that where this is accomplished, the health of the inmates must be materially benefited. Mr. Ruttan says, that by the means of one of these ventilators, no less than 500 cubic feet of air, are brought into the room per minute, and consequently as much foul air expelled. We shall not here enter into an explanation of the principles upon which Mr. Ruttan founds his theories, but we certainly believe them to be correct, and when we say this, we also feel confident that we speak the sentiments of the School Trustees, under whose supervision the School Houses were built, and so convinced are they of its benefit, that they are determined to have all the School Houses supplied with them.

Our readers must not suppose that this system of ventilation is confined to School Houses, as it can, with equally beneficial results, be introduced into churches and private dwellings. We were shewn a letter from a scientific gentleman in Toronto, who has had it introduced into his dwelling, and who speaks of the whole system in the highest commendation, both as regards health and the minor consideration of economy in fuel, as one of Mr. Ruttan's stoves will suffice to heat a large house.

As Spring will now soon be, and parties will be building, we seriously recommend them to consult Mr. Ruttan before doing so. The whole extra expense in introducing his system of ventilation will not exceed £25, and for this small sum, many of the ills to which the human system is heir, may be averted.—*Belleville Intelligencer*.

#### CHEMISTRY AND PERFUMERY.

Much aid has been given by chemistry to the art of perfumery. It is true that soap and perfumery are rather rivals, the increase of the former diminishing the use of the latter. Costly perfumes, formerly employed as a mask to want of cleanliness, are less required now that soap has become a type of civilization. Perfumers, if they do not occupy whole streets with their shops, as they did in ancient Capua, show more science in attaining their perfumes than those of former times.

The jury in the World's Fair, or rather two distinguished chemists of that jury, Dr. Hoffman and Mr. De la Rue, ascertained that some of the most delicate perfumes were made by chemical artifice, and not, as of old, by distilling them from flowers. The perfume of flowers often consists of oils and ethers, which the chemist can com-

pound artificially in his laboratory. Commercial enterprise has availed itself of this fact, and sent to the exhibition, in the form of essences, perfumes thus prepared. Singularly enough, they are generally derived from substances of intensely disgusting odour. A peculiarly fetid one, termed fusel oil, is formed in making brandy and whisky. This fusel oil, distilled with sulphuric acid and acetate of potash, gives the oil of pears. The oil of apples is made from the same fusel oil, by distillation with sulphuric acid and bicromate of potash. The oil of pine-apples is obtained from the product of the action of putrid cheese on sugar, or by making a soap with butter, and distilling it with alcohol and sulphuric acid, and is now largely employed in England, in the preparation of pine-apple ale.

Oil of grapes and oil of cognac, used to impart the flavor of French cognac to British brandy, are little else than fusel oil. The artificial oil of bitter almonds, now so largely employed in perfuming soaps and for flavouring confectionary, is prepared by the action of nitric acid on the fetid piles of gas tar.

Many a fair forehead is damped with *eau de millefiers*, without knowing that its essential ingredient is derived from the drainage of cow-houses. The wintergreen oil imported from New Jersey, as being produced from a plant indigenous there, is artificially made from willows, and a body procured by the distillation of wood. All these are direct modern appliances of science to an industrial purpose, and imply an acquaintance with the highest investigations of organic chemistry. Let us recollect that the oil of lemons, turpentine, oil of juniper, oil of roses, oil of copaiba, oil rosemary, and many other oils, are identical in composition, and it is not difficult to conceive that perfumery may derive further aid from chemistry.

#### THE DEPTH OF THE OCEAN.

The Royal Society met on the 27th ult., the Earl of Enniskillen, vice-president in the chair. A very interesting communication from Capt. Denham, R. N., of her Majesty's ship *Herald* was read. Captain Denham is engaged on a scientific voyage in the above ship, and among other subjects, he was particularly engaged to endeavor on favorable occasions to ascertain the depth of the ocean. The present communication gives an account of a deep sea sounding in 7,766 fathoms, in 36 deg. 49 min. south latitude, and 37 deg. 6 min. west longitude. The sounding was obtained on a calm day, October 30, 1852, on the passage from Rio de Janeiro to the Cape of Good Hope. The sounding line was 1-10 of an inch in diameter, laid into one length and weighing when dry, 1 lb. for every 100 fathoms. Captain Denham received from Commodore M. Keevor, of the United States navy commanding the *Congress* frigate, 15,000 fathoms of this line, 10,000 on one reel and 5,000 on another, and he considers it to have been admirably adapted for the purpose for which it was constructed, and to which it was applied. The plummet weighed 9 lbs., and was 11 inches long, and 1-7th of an inch in diameter. When 7,766 fathoms had run



off the reel the sea bottom was reached. Captain Denham stated that Lieutenant Hutchison and himself, in separate boats, with their own hands, drew the plummet up 50 fathoms several times; and after it had renewed its descent, it stopped abruptly at the original mark to a fathom and would not take another turn of the reel. The whole time taken by the plummet in descending to this amazing depth of 7,706 fathoms or 7.7 geographical miles or 60 to a degree, was 9 hours and twenty four minutes and 45 seconds. The highest summits of the Himalaya are little more than 28,000 feet, or 47 geographical miles above the sea. The sea bottom has therefore depths greatly exceeding the elevation of the highest pinnacle above its surface. Great care was taken in the endeavor to bring the plummet again to the surface, to show the nature of the bottom, but while carefully reeling in, the line broke at 140 fathoms below the water line, carrying away a thermometer which had been attached to it at 3,000 fathoms. This sound is the deepest that has ever been made.

**AN AUSTRALIAN NIGHT.**—It is difficult for any writer to give a good description of the amazing beauty of an Australian sky. Its colors, various as those of the rainbow, could only be conveyed by a first-rate painter; if, indeed, it be in the power of any one to do justice to such a subject. But if the heavens are grand during the day, the night also, in its more subdued colors, and tranquil loveliness, fully equals the daylight scene; then, indeed, the expansive vault claims all our admiration, and every star shining out with wonderful distinctness, seems to court the attention of the silver moon as she majestically glides upon her allotted path. I have frequently been out on a journey on such a night, and whilst allowing the horse his own time to walk along the road, have solaced myself by reading in the still moonlight. In the bush, at a time like this, the birds having gone to the roost, save a species of owl, and one or two other night birds, all nature seems at rest, and the peace of the scene is unbroken, except by the watch dogs at the stations challenging the lonely howl of the wild-dogs by their deep bark, which is echoed and re-echoed from hill to hill until lost in the distance.—*Wilkinson's South Australia.*

**THE ALPINE HORN.**—Is an instrument made of the bark of a cherry tree, and like a speaking trumpet, is used to convey sounds to a great distance. When the last rays of the sun gild the summit of the Alps, the shepherd who inhabits the highest peak of these mountains takes his horn, and cries with a loud voice, "Praised be the Lord." As soon as the neighboring shepherds hear him, they leave their huts and repeat these words. The sounds are prolonged many minutes whilst the echoes of the mountains and grottoes of the rocks repeat the name of God. Imagination cannot picture anything more solemn or sublime than this scene. During the silence that succeeds, the shepherds bend their knees and pray in the open air, and then retire to their huts to rest. The sunlight gilding the tops of those stupendous mountains, upon which the blue

vault of heaven seems to rest, the magnificent scenery around, and the voices of the shepherds sounding from rock to rock the praise of the Almighty, must fill the mind of every traveller with enthusiasm and awe.

**STRAW AS A COVERING.**—Clean straw is an excellent covering for many things. thousands of sea-kale in frames of under hoops have no other blanching material; and how clean they grow in it! Rhubarb, in winter forcing an early spring, grows beautifully punky. It is well known that early in spring frosts destroy rhubarb; but if a six inch layer of straw is put on every crown, as the heads put up, they raise the straw with them, and it not only gives the stalks a better color, and makes them less "stringy," but it keeps the leaves from growing too large. No wind will blow it off, nor will the most intense frosts injure the plants. Straw should not be looked upon as a mere litter; it is as good as a flame on a large scale. What sort of eatable strawberries would we have without straw? In summer, every crop, such as gooseberries, currants, and many other things, should have the protection of straw which keeps the sun from drying up the surface, and the surface roots, damp and cool, while all the weeds are kept down. Market gardeners use it for their frames; it matter not whether for cucumbers, melons or potatoes, straw is their covering, and their crops are more secure than when protected by a thin mat. But some may object to the use of straw, on account of the litter it makes in a garden; but if any of those who object to its use for this reason will just take a peep into Covent Garden market at any season, they cannot fail to be struck with the quality of the produce, in the rising of which straw plays an important part. Straw is also the best of all manure for a strong retentive soil, when it is dug in fresh, as it decays and leaves innumerable worm-like holes, which act as drains for the roots.—*Gardener's Chronicle.*

**POLITENESS BETWEEN BROTHERS AND SISTERS.**—By endeavouring to acquire a habit of politeness, it will soon become familiar, and sit on you with ease, if not with elegance. Let it never be forgotten that genuine politeness is a great fosterer of family love; it allays accidental irritation, by preventing harsh retorts and rude contradictions; it softens the boisterous, stimulates the indolent, suppresses selfishness, and by forming a habit of consideration for others, harmonizes the whole. Politeness begets politeness, and brothers may easily be won by it to leave off the rude ways they bring home from school or college. Sisters ought never to receive any little attention without thanking them for it, never to ask a favor of them but in courteous terms, never to reply to their questions in monosyllables, and they will soon be ashamed to do such things themselves. Both precept and example ought to be laid under contribution, to convince them that no one can have really good manners abroad who is not habitually polite at home.

If there be anything that can be called *genius*, it consists chiefly in ability to give that attention to a subject which keeps it steadily in the mind, till we have surveyed it accurately on all sides.

## Poetry.

## HONOUR TO THE PLOUGH.

'Though clouds o'ercrest our native sky,  
 And seem to dim our sun,  
 We will not cower in languor lie,  
 Or deem the day as done.  
 The rural arts we loved before,  
 No less we'll cherish now;  
 And crown the banquet as of yore,  
 With Honour to the Plough.

In these fair fields where peaceful soil  
 To faith and hope are given,  
 We'll seek the prize with honest toil,  
 And leave the rest to Heaven.  
 We'll gird us to the work like men  
 Who own a holy vow.  
 And if in joy we meet again,  
 Give Honour to the Plough.

Let Art, arrayed in magic power,  
 With labour, hand in hand,  
 Go forth; and now, in peril's hour,  
 Sustain a sinking land.  
 Let never sloth unnerve the arm,  
 Or fear the spirit cow;  
 These words alone should work a charm—  
 All Honour to the Plough.

The heath redress, the meadow drain,  
 The latent swamp explore,  
 And o'er the long expecting plain  
 Diffuse the quickening store!  
 Then fearless urge the furrow deep,  
 Up to the mountain's brow,  
 And when the rich results you reap,  
 Give Honour to the Plough.

So still shall health by pastures green  
 And nodding harvest roam,  
 And still behind her rustic screen  
 Shall virtue find a home.  
 And while their bowers the Muses build  
 Beneath the neighbouring bough,  
 Shall many a grateful voice be filled,  
 With Honour to the Plough.

—Blackwood's Magazine.

Prosperity makes friends; adversity tries them.  
 Prosperity best discovers vice; adversity, virtue.  
 Moral rectitude is the accomplishment for heaven.  
 Good intentions will not justify evil actions.  
 No monuments of art compare with virtuous actions.  
 He who swells in prosperity, will shrink in adversity.  
 Accurate knowledge is the basis of correct opinions.  
 He who turns his back to the sun must see shadows.  
 A good way to thrive is to prune off needless wants.  
 Those who will excel in art must excel in industry.  
 The farmers are the founders of civilization.—Daniel Webster.

Virtue to become vigorous or useful, must be habitually active.  
 If we have a free press, there should be no anonymous writers.  
 All physical evils are so many beacon lights to warn us from vice.  
 The sympathy of friends in affliction charms away half the woe.  
 Knowledge may give weight, but accomplishments only give lustre.  
 Let reason go before every enterprise, and counsel before action.  
 The more honesty a man has the less he affects the air of a saint.

Write down the advice of him who loves you, though you dislike it at present.

Noble actions are the substance of life; good sayings its ornament and guide.

Application to useful study is a powerful guard, and a crown of glory to youth.

Attention, steady, and continuous, is the corner stone of the intellectual temple.

We ought to submit to the greatest inconvenience rather than commit the least sin.

The gem cannot be polished without friction, nor man perfected without adversity.

One of the expenses of longevity is the loss of those who have been dear to us in our pilgrimage.

Ambition sacrifices the present to the future, but pleasure sacrifices the future to the present.

Affectation lights a candle to our defects, and though it may gratify ourselves, it disgusts all others.

Our passions are like convulsion fits, which make us stronger for the time, but leave us weaker forever after.

Grandiloquence results not so much from the knowledge of other languages, as from ignorance of our own.

Men make themselves ridiculous, not so much by the qualities they have, as by the affectation of those they have not.

They who mistake the excitement of a reform, for the source of danger, must, we should think, have overlooked all history.

While the faults of others do not touch us, we mildly view them in the abstract; but when they come in contact with our personal feelings and interests, they appear to become so large as to demand our strongest condemnation.

A blacksmith, having been asked why he did not sue his grievous calumniator for damages, pertinently replied, "I can hammer out a better character than the lawyers would give me."

Kiss the hand of him who can renounce what he has publicly taught, when convicted of his error; and who, with heartfelt joy embraces the truth, though in the sacrifice of favorable opinions.—Lavater.

The great comprehensive truths, written in every page of our history, are these: Human happiness has no perfect security but freedom; freedom, none but virtue; virtue none but knowledge; and neither freedom nor virtue has any vigour or immortal hope, except in the principles of the Christian faith, and in the sanctions of the Christian religion.—Quincy.

It seems necessary, in order that the Universe be comprehensible, that we recognize Deity not merely as the Creator, but as the ever-present preserver, sustainer, and efficient cause of all phenomena. In the rain and sunshine, in the soft zephyr, in the cloud, the torrent, and the thunder, in the bursting blossoms and the fading branch, in the revolving season and the falling star, there is the Infinite Essence and the mystic development of His Will.—Prof. Nichol.

The will of man, active and spontaneous, and fluctuating as it appears to be, is an instrument in the hand of God,—he turns it at his pleasure—he brings other instruments to act upon it—he plies it with all its excitements—he measures the force and proportion of each one of them—and every step of every individual receives as determinate a character from the hand of God, as every mile of a planet's orbit, or every gust of wind, or every wave of the sea, or every particle of flying dust.—Chalmers.



THE WORLD.  
(After Sir Walter Raleigh.)

BY EDWIN WAUGH.

This foolish world doth wink  
Its cunning lid;  
And when it thinks, it thinks  
Its thoughts are hid.

Its pley 's a screen  
Where vice doth hide;  
Its purity's unclean,—  
Its neckless, pride.

Its charity 's a bait  
To catch a name;  
Its kindness covers hate;  
Its praise is blame.

Its learning 's a empty talk;  
Its heart is cold;  
Its church is an exchange;  
Its god is gold.

Its pleasures all are blind,  
And lead to pain;  
Its treasures are a kind  
Of losing gain.

Last moves it more than love,  
Fear more than shame;  
Its best ambitions have  
A grovelling aim.

Oh! cure our moral madness,  
Our soul's disease.  
Show us that vice brings sad-  
And virtue, ease. [ness.

And teach us in the hour  
Of sin's dismay,  
That Truth 's the only flower  
Without decay.

MARKETS, &c.

Toronto, March 31st.

Our markets must now be considered in a stationary condition. The latest accounts from the United Kingdom are more favourable as respects the weather and condition of the land for spring crops. Importations had been very heavy, and prices have had in consequence a somewhat downward tendency. But as a very large breadth of land prepared for fall wheat had not been sown in consequence of almost unprecedented wet weather, and spring wheat being but an indifferent substitute, we are much inclined to think that the present scale of prices will be maintained.

Winter has now left us, and spring is fast approaching, bringing with it its usual load of care and labour to the husbandman, but not divested, however, of its peculiar hopes and pleasures. The frost in many situations is quite out, and the snow gone; so that agricultural and horticultural operations are about commencing in right earnest. Winter wheat is said to be generally looking well, and with a favourable spring we may reasonably anticipate a productive autumn.

**FLOUR.**—The continued depression and decline in prices at the seaboard and in England, has had the effect of checking speculation at this port. 3000 bbls covers the week's transactions at the quotations. The orders, which have been principally on Montreal account during winter, are withdrawn for the present, waiting a reaction, which from the review of the foreign corn trade, in the *Mark Lane Express*, per last steamer, is likely to take place on first appearance of wet weather in England, as the English farmers are depending upon dry weather to sow what seed they were obliged to leave out last fall, owing to the continued wet weather during seed time.

**WHEAT.**—The breaking up of winter roads, prevents wheat coming forward, and the absence of orders makes business dull in wheat. It is a singular feature in the Wheat and Flour trade of Western Canada, that few orders have been filled on American account the past winter. The wheat bought (apart from what millers hold,) has been principally on English account.

**PORK.**—The pork market at the seaboard remains dull, and prices continue to decline. Packers here require a great portion of their stocks for home consumption. The weight of Pork is held on Montreal

and Quebec account, and a large proportion required for the lower ports and the lumber trade.

**BUTTER.**—This article has declined; and taking prices at the seaboard as a guide, will reduce the value here to 6d per pound for good keg butter.

**PEAS.**—There has been quite a demand during the week for field and marrowfat peas for the American market, the latter at 1 25 per bushel, and 60c. for common field peas, f.o.b.

In other articles but little doing. Prices nominal.

This port is becoming the principle one for early spring operations in the products of the country, owing partly to its being the only Port on Lake Ontario accessible during the winter and spring months where any quantity of our staples accumulates. This together with the Railroads building, and the rapidly increasing wholesale importing houses, will make Toronto the Liverpool of Canada West.

**FREIGHTS.**—The spring business may now be said to have commenced. Propellers are coming in from Oswego, freighted with English goods via Boston, and loading with flour for New York via Oswego. The first shipment of flour has been taken at 48 cents through to New York, from Toronto, including all charges at Oswego. The propeller St. Lawrence will commence loading next week for the same port. If the Oswego forwarders can guarantee to the Canadian shippers dispatch, a depot on first class steamers to Oswego, they would secure all the New York passenger and freight trade of Canada West, as that port is accessible at all seasons, and the nearest route to the seaboard. The Montreal forwarders must lower their views or lose the trade.

EDITOR'S NOTICES.

RECEIVED.—J. D., Mariposa.

Mr. Edward Jones, Stamford, will accept our thanks for two back Numbers.

In consequence of the piston of the Steam Press being deranged, and having to undergo some repairs, the publication of this No. of the *Agriculturist*, has been unavoidably delayed.

NOTICE TO TREASURERS OF AGRICULTURAL SOCIETIES.

The Statute requires that the Subscriptions of Members of all Agricultural Societies (whether of Counties or Townships) should be paid into the hands of the Treasurer of the County Society on or before the 1st day of May next. After which the Treasurers of County Societies are required to make an affidavit of the sums paid into their hands, in the form of the Schedule attached to the Act; the affidavit to be afterwards transmitted to the Board of Agriculture in Toronto.

TORONTO CORN EXCHANGE.

The merchants, millers, and traders of this city and neighbourhood have formed, we understand, a Corn Exchange; holding a meeting daily, in one of the rooms of the St. Lawrence Hall, from twelve to one o'clock. Such an organisation has long been wanting in this rising city, whose commerce is daily spreading, and we shall give more particulars respecting it hereafter.

## PURE-BRED CATTLE AND SHEEP.

We have much pleasure in calling the attention of our readers to the advertisement of L. G. Morris, Esq., in the present number. Mr. Morris, by his public spirit, sound judgment, and honorable dealing, has already done much as an importer and breeder, to improve the live stock of this continent. Those who desire really superior animals would do well to pay this gentleman a visit.

## AGRICULTURE IN MICHIGAN.

The Legislature of this State has appropriated ten thousand dollars for the establishment of a Model Farm at Lansing.

## GREENHOUSES IN WINTER.

The *Horticulturist* recommends the sponging of the leaves of such plants as are large enough to admit of the practice, with clean water, slightly warm. This practice, frequently repeated, tends to preserve the health and improve the appearance of plants during winter, when so many are apt to become sickly and die.

## HEDGES IN AUSTRALIA.

It is stated in recent English papers that in the neighbourhood of Wisbach, in Lincolnshire, a brisk trade was going on in collecting the "haws," or seeds of the white thorn, for exportation to Australia, for raising quickset hedges in those extensive and flourishing colonies.

## Advertisements.

## FRESH GARDEN, FIELD AND FLOWER SEEDS.

**T**he Subscriber begs to inform his Friends and the Public, that his Stock of Fresh Seeds for Spring sowing is now complete.

The Stock of Agricultural seeds is well selected, comprising a fine Lot of Imported

Purple Top Swede Turnip	Yellow Globe Mangel Wurtzel.
Yellow Aberdeen do.	Long Red do. do.
White Globe, and other varieties.	Spring Tares, or Vetches.
White Belgian Carrot.	Red and White Clover.
Long Orange Altringham, &c., &c.	Timothy, and other Grasses.
Field Farnips.	100 Bus. Good Seed Barley, (weighs 52 lbs. to the bushel.)
Spring Rape & Cow Grass	600 Bus. common Oats.
White Marrow-fat Peas.	100 " Early Ash Top Potatoes.
Blue Imperial	200 " Early June, (a fine sort.
Early and Late Field do.	
Scotch Oats, (imported.)	
White Sugar Beet.	

Price of Potatoes—\$1 per Bushel.

The subscriber has also a full and general assortment of all kinds of GARDEN SEEDS, suitable for the country—a catalogue of which, with directions for sowing seeds, can be had GRATIS on application.

Twenty Packets of choice Flower Seeds will be sent free by Post to any part of the Province, to the address of any party remitting \$1 free of postage.

JAMES FLEMING,

Seedsman to the *Agricultural Association* of Upper Canada.

Toronto, 24th March, 1853.

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## PURE BRED MALE STOCK,

AT

PRIVATE SALE AT MOUNT FORDHAM,

*Eleven Miles from the City Hall, New York.*

**I** WILL Sell and Let from 10 to 12 Short Horned Bull Calves; 4 Devon Bulls and Bull C-ives, and from 12 to 15 South Down Rams. The Annual Sale by Auction will be omitted this year, as I wish to reserve all the females, having recently purchased another farm, to enable me to increase my Breeding Establishment. My Hog Stock, including all the Spring Litters, are engaged. Catalogues with full description and pedigrees of the above Bulls and South Down Rams with the prices attached, can be obtained by the 15th of April next, from the Subscriber, or at any of the principal Agricultural Stores, or from the editors of the principal Agricultural Journals.

L. G. MORRIS.

March 23rd, 1853.

3m.

## WANTED,

**100** JUNE and DECEMBER Nos. of the 'AGRICULTURIST' for 1852. Subscribers who can spare any of the above Nos. will be paid by sending them to this Office.

## Important to Stock Breeders!

## FOR SALE,

**A** VERY superior Four-Year Old BULL, bred from a thorough-bred Durham Bull, and thoroughly-bred imported Hereford Cow.

For further particulars, apply, if by letter (post paid) to the subscriber,

JOHN IRELAND.

Crosby Corners, P. O.,  
Markham, Canada West,  
December 23rd, 1852.

11.

## The Canadian Agriculturist,

**E**DITED by G. BUCKLAND, Secretary of the Board of Agriculture, to whom all communications are to be addressed, is published on the First of each month by the Proprietor, *William McDougall* at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

## TERMS.

SINGLE COPIES—One Dollar per annum.

CLUBS, or Members of Agricultural Societies ordering 25 copies or upwards—*Half a Dollar each Copy.*

Subscriptions always *in advance*, and none taken but from the commencement of each year. The vols. for 1849-50-51, at 5s. each, bound.

N. B.—No advertisements inserted except those having an especial reference to agriculture. Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.



THE  
CANADIAN AGRICULTURIST  
AND  
Transactions  
OF THE  
BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. V.

TORONTO, MAY, 1853.

NO. 5.

MEETING OF THE BOARD OF AGRICULTURE.

A meeting of the Board was held in their rooms, in this City, on Wednesday April 29th. E. W. Thomson, Esq., *President*, took the chair at 10 o'clock A.M. Members present—Hon. Adam Fergusson, Mr. Sheriff Ruttan, R. L. Denison, Esq., *Treasurer*, and Professor Buckland, *Secretary*.

The Minutes of the last meeting having been read and confirmed, the Secretary read a letter from Wm. Matthie, Esq., of Brockville, President of the U. Canada Agricultural Association, intimating his fears that in consequence of urgent and unexpected business he would be prevented attending. A letter was also read from J. B. Marks, Esq., stating his inability to attend.

After some conversation of a preliminary character, it was agreed to take up first the revision of the Premium List and regulations of the Exhibition for the present year. The Secretary read several communications containing suggestions and recommendations in reference to that subject, from the President of the Association, Messrs. John Wade of Port Hope, Daniel Tye of Wilmot, and others. A letter was also read from Mr. Sheriff Treadwell, Vice-President of the Association. The consideration of these matters occupied the principal part of this day's sitting, and a number of modifications to the rules, and additions to the Prize List were made. The particulars will appear with the revised list, in the June number of the *Agriculturist*.

A number of resolutions and regulations relating to mere details were adopted and entered on the minutes of proceedings. The following only are deemed of sufficient public importance to be published in this place:—

*Resolved*,—That all blood Horses and thoroughbred Cattle intended for competition at the next Annual Show be entered by the Secretary in Toronto not later than Saturday, September 24th, and that their full pedigrees be sent in at the same time, for the purpose of examination. No animals shall be allowed to compete as pure bred, unless they possess regular

Stud and Herd Book pedigrees, or satisfactory evidence produced that they are directly descended from such Stock.

*Resolved*,—That Professor Croft, Mr. James Fleming, and the Secretary, be a Committee for revising the Prizes in the Horticultural department.

*Resolved*,—That the Secretary be instructed to make enquiries from England or the United States with reference to the price and economical results of the most approved Machines for making draining tiles and pipes, and to publish the information, thus acquired, in the *Agriculturist*.

*Resolved*,—That the thanks of the Board be communicated to His Excellency the Governor General, for his donation of £20, to the funds of the Upper Canada Agricultural Association.

*Resolved*,—That the said sum of £20, given by His Excellency, be awarded to any person in Upper Canada who shall be the first to introduce and put into working operation, to the satisfaction of the Board, a pipe and drain tile Machine, of the best construction; and that the Association give a Prize of £10, for a second Machine, so constructed and put in operation.

John Harland, Esq., having stated that he was entrusted with the sum of £25, being a grant from the Municipal Council of the county of Wellington to the funds of the Provincial Agricultural Association; it was

*Resolved*,—That the thanks of the Board be given to the County Council of Wellington for their liberal donation.

At this stage of the proceedings the Secretary read a telegraphic dispatch stating that the President of the Association, Wm. Matthie, Esq., had left Brockville to attend the Board; also a letter just received by post from that gentleman, enumerating several Prizes to the amount of £50, which he was desirous of giving at the next Exhibition, if approved of by the Board.—Whereupon it was

*Resolved*,—That the warmest thanks of the Board be given to Wm. Matthie, Esq., President of the Upper Canada Agricultural Association, for his munificent contribution; and that the Prizes proposed by him be adopted, and inserted in the forthcoming Premium List under a distinct heading of "THE PRESIDENT'S PRIZES."

The following are the particulars and the conditions of these prizes, which are inserted here without abridgment:—

**THE PRESIDENT'S PRIZES FOR THE ENCOURAGEMENT OF THE FOLLOWING PRODUCTIONS OF CANADIAN GROWTH AND MANUFACTURE.**

Best 5 bushels of Winter Wheat . . .	£5 0 0
Wheat and flour form two of the great staples of Canadian exportation.	
Best 3 firkins of Butter, from 60 to 80 lbs. each, put up in suitable kegs for export by sea . . . . .	4 0 0
Best 2 Cheeses, of not less than 30lbs. each . . . . .	2 0 0
Butter and cheese are of growing importance for export to England and the United States; their quality may with a little care be greatly improved, and the quantity much increased within the circle of almost every farm, without much additional cost for labour.	
Best 112 lbs. Flax . . . . .	4 0 0
" 112 lbs. Hemp . . . . .	2 0 0
The soil and climate of Canada are well adapted for the cultivation of these, and a ready, and it is believed, a profitable foreign market could be formed for the surplus production.	
Best 29 lbs. Broom Corn Bush . . . . .	1 0 0
" 60 lbs. Red Clover Seed . . . . .	1 0 0
Both of these are imported,—the former largely, in a raw as well as manufactured state—the latter, east of Kingston, is not produced but to a small extent. Both might be raised sufficient for the wants of the country.	
Best South-down Ram, two shears . . . . .	4 0 0
Wool of the finer quality is now imported to some extent, its production might with great advantage be increased to supply the manufactures of the woollen goods, now so successfully made in Canada, as well as to increase the present exports.	
Best Boar, one year and over, <i>large breed</i> . . . . .	3 0 0
Pork (Mess) is still imported to a limited extent for the lumber trade.—This, our country is capable of producing profitably, for home and export.	
Best Plough for general purposes . . . . .	1 10 0
" Horse-power Thrasher and Separator . . . . .	2 10 0
Good Agricultural Implements are necessary for successful farming, the skill for manufacturing which, is to be found in Canada, if anywhere.	
Best Essay, written by a person under 25 years of age, following agricultural pursuits in Canada, East or West, "On the dignity of agricultural labor—and the best means of making that labour profitable, in view of the climate, soil, present and prospective markets, and the increasing transit facilities of the country." . . . . .	10 0 0
There is <i>mind</i> among the agricultural youth of Canada; its development is most desirable—and the	

dignity and profitableness of their pursuit is a proper theme for its display.

To the County Agricultural Society of that County which shall carry off the greatest number of the foregoing prizes. 10 0 0  
This sum to be devoted thereafter to forming special prizes, by the said County Society.

The Judges upon the foregoing prizes will be appointed by the Association, and the amount paid during the Exhibition.

George Buckland, Esq., Secretary, and such other gentlemen as he may select, will consider and determine the merits of the Essays. The Essays to be sent in, marked with a cipher, before the 1st of September to Mr. Buckland, accompanied with the name and cipher of the writer, the note only of the successful essayist will be opened. The successful essay and such others as may be considered worthy, with the consent of the writers of the latter, to be published by the Association in the *Canadian Agriculturist*.

The following gentlemen were appointed a Local Committee at Hamilton, for fencing and arranging Show Grounds, &c., with power to add to their number, in accordance with the Bye-law, which restricts the whole number to fifteen:—The Mayor of Hamilton; N. Ford, Esq., Ex-Mayor; the President of the Agricultural Society of the County of Wentworth; President of the Horticultural Society of Hamilton; and the President of the Hamilton Mechanics' Institute.

The Board adjourned at 5 o'clock to 9 next morning.

**SECOND DAY'S SITTING.**

Thursday, April 28th.

The Board met at 9 o'clock. In addition to the members present yesterday, was William Matthie, Esq., the President of the Provincial Association.

The revision of the Premium List made during the first sitting was reviewed, and some further additions made; among them may be mentioned here,—the sum of £5 for the best Report on the application of Bone-dust as a Manure; and the admission of Galloway cattle as a distinct class into the forthcoming List.

The Secretary having received several County Agricultural Reports, in competition for the Society's Prizes, it was,

*Resolved*,—That the President of the Association, with Messrs. John Harland and Hugh Thomson, be a Committee to examine the said Reports, and to adjudicate upon them.

Communications on the subject of providing tents for the Exhibition were read, and the arrangement with Mr. Williams, of Rochester, approved of; and the Treasurer was authorized to hire what additional tents might be necessary.

The Experimental Farm, commenced last year on the University Grounds, next engaged the attention of the Board, and the necessity of



proceeding with the object with greater earnestness and dispatch, was unanimously felt and approved of. It was therefore

*Resolved*,—That the requisite means for putting the Experimental Farm into a more improving condition be forthwith taken; that a team and necessary implements be procured, not to exceed in the first instance, £250, which sum the Treasurer is hereby authorised to advance, if necessary; and that plans and estimates for a dwelling house, with necessary buildings and fences, be procured with as little delay as possible; and that the Chairman, Secretary and Treasurer, be a Committee to carry out the Provisions of this Resolution.

The Reports received by the Board from County and Township Agricultural Societies for 1852, in accordance with the provisions of the present Statute, may be regarded on the whole as satisfactory, and a decided improvement on previous years. Several cases of difficulty experienced by Societies, in regard to the distribution of the Government grant in one case, and the place of holding the Exhibition, and the legal recognition of two rival Societies in the same County, in others. It was

*Resolved*,—That the Board can only take action in disputed matters, when the law provides that it shall act, and therefore anything that has occurred in any County with respect to the division of monies by County and Township Societies for the past year, is beyond the control of the Board.

*Resolved*,—That in the event of two or more Societies being formed in any one County, the Board can only decide which is the legally constituted Society by reference to the date of its formation. In all cases the Society first formed, if it has complied fully with the conditions of the law, should be accepted as the authorized County Society.

The Secretary laid before the Board a letter from James Whitman, Esq., of New York, with several circulars relative to the forthcoming New York Exhibition; also a Resolution passed by the Toronto local committee of the Provincial Association in relation to the same subject; whereupon it was

*Resolved*,—That in reference to the Resolution passed by the Provincial Association in September last, the Board are not now in a position to take any action with respect to the New York Exhibition, not having received any official communication from the Provincial Government on the subject.

*Resolved*,—That this Board do adjourn to the second Wednesday in June, to meet in the City Hotel at Hamilton.

Signed E. W. THOMSON,  
Chairman.

Mr. Card, of Guelph, offers through Mr. Harland, a quart of seed of the Gold of Pleasure for the purpose of testing on the Experimental Farm.

Just as the Board rose the Secretary received the following letter from David Christie, Esq., M. P. P.:—

Quebec, 23rd April, 1853.

My dear Sir,—It will be impossible for me to leave my Parliamentary duties so as to attend the Meeting of the Board of Agriculture. I regret this very much.

I am well pleased to learn from you that the Agricultural Reports are of so good a character. This is a point of the highest importance to Canada, and the success which has attended our efforts to elicit information, shows the propriety of the plan adopted by us. Wishing you a prosperous meeting—

I remain,  
Yours very truly,  
DAVID CHRISTIE.

George Buckland, Esq., Toronto.

# THE ANNUAL REPORT OF THE COUNTY OF PETERBOROUGH AGRICULTURAL SOCIETY FOR 1852.

In all ages Agriculture has been regarded as the most useful and necessary of occupations. It is said, "The King himself is served by the field." Whatever improves the Agriculture of a country promotes its welfare, therefore every true patriot rejoices at any advance made in the art of husbandry. Your Board consider the present state of this colony particularly cheering in this respect.

A glance at the statistics of this Province convinces at once of the great increase in population and agricultural products, &c., and of necessity in prosperity.

The appointment of a Minister of Agriculture, together with a Bureau of Agriculture, promise much for the welfare of the farming community, as they will be valuable means for collecting and circulating information, instituting experiments and various other matters which cannot be accomplished by individuals or individual Societies.

Your Board refer with pleasure to the flourishing condition of the Provincial Agricultural Association. At its last show many articles were superior and others equal in quality to those exhibited at the New York State fair. In aid of its funds your Board granted £10.

Your Board however would look at their own sphere of operation and see if there is an advance made here. It is with much pleasure they give tangible evidence of the rapid improvement of this County and great increase in wealth, as shewn by the Census taken in 1852.

Your Board regret they cannot give as detailed a statement as they could wish; however, sufficient can be given to convince every one of the prosperity of this County; it may be observed that by County is meant the United Counties of Peterborough and Victoria.

In the year 1842, the number of inhabitants in this County was 13,745; in the year 1852, 26,894, showing an increase in the population of a fraction less than 100 per cent in 10 years. An increase in a County which is seldom obtained

even in the neighboring Republic so justly famed for its rapid increase in population. To shew that this increase has not only been rapid but proportionate, it is only necessary to add that in 1848 the population was 21,271, in 1850, 22,062, and for the sake of comparison, we give 1852, 26,894.

Again in 1847 the number of bushels of wheat raised in the County was 276,044, in 1849, the number of bushels was 294,333; in 1851, the number was 518,470, shewing an increase in 4 years of a little less than 100 per cent.

In 1847 the quantity of Oats raised was 242,620 bushels; in 1851, 437,376, almost doubling the quantity in four years.

In 1847 the amount of Peas raised was 47,348; in 1849, 68,234; in 1851, 109,905, shewing a gradual and steady increase in the first two years of 45 per cent, and nearly 50 per cent in the last two years.

In the year 1849, 140,483 bushels of turnips were produced. Your Board regret they cannot conveniently obtain a statement in years past, and for the year 1851, excepting for the County of Peterborough, which raised 90,781 bushels. They feel confident that the increase in this article is very great; they would almost be justified in saying that for every turnip grown 10 years ago there is now a bushel, if not more.

In 1849, the produce of hay was 10,567 tons, and in 1851, 17,538.

In 1847, the amount of wool was 67,104 lbs; in 1849, 79,687 lbs; in 1851, 90,942 lbs, an increase of upwards of 40 per cent in four years.

Your Board would particularly direct attention to the great improvement in dairy produce. Ten years ago the amount of butter packed for export, and cheese made for market, was but very small. Now the increase is as follows:

In the year 1847, 98,372 lbs butter were made for market; in 1849, 132,969, and in 1851, 527,709 being an increase of 500 per cent in four years.

In 1847, 14,384 lbs of cheese were made for market; in 1851, 43,654, being an increase of over 300 per cent. in four years.

In 1847, there were 3,028 bbls beef and pork packed for market: in 1851, there were 12,956, an increase in four years of over 400 per cent.

In the year 1842, the number of horses was 1,330, in 1852, 5,485.

In the year 1847, the number of sheep was 24,228; in 1850, 27,588, and in 1852, 33,331.

In 1847, the number of hogs was 16,471, and in 1852, 19,324.

The aggregate amount of rateable property according to the census of 1842, amounted to £159,900. The aggregate amount of rateable

property according to the census for 1852 was £775,725, exclusive of the rental of the town of Peterborough, which was £9,521.

Average value of uncultivated land in 1842 was 4s. per acre; in 1850, 15s. 11d., in 1842 the average value of cultivated lands was £1 per acre, in 1850, the average value was £1 14s. 5d.

In 1842, there were only eight pleasure waggons in the whole County, now in one township alone of 173 rate-payers, there are 13 pleasure waggons. This circumstance although trivial in itself, certainly indicates that improvement in roads and attendance to the comforts of life in some degree keep pace with the increasing wealth of the County.

In looking over the above statistics two things must strike the most casual observer.

First, the very proportionate as well as rapid increase of the individual items; take for instance that of sheep, as follows: 24,000, 27,000, 33,000.

Second, That one article of produce is not cultivated to the neglect of another. We see that the increase of grain does not decrease the amount of dairy and grazing produce. This shows clearly that farming in all its branches is rapidly on the advance, and that one department keeps pace with another.

Another interesting enquiry suggests itself.—Is there an increase in the average produce of each individual? By the subjoined statement it appears there is.

In 1847, the produce of wheat was at the rate of 13 bushels to each inhabitant; in 1851 19 bushels to each.

In 1847, the produce of oats was at the rate of 11 bushels to each, in 1851, 16 bushels.

In 1847, the produce of peas a little over 1 bushel; in 1851, a little over 1 bushels.

In 1847, the produce of cheese was about  $\frac{2}{3}$  lb. to each, in 1851, nearly  $1\frac{1}{4}$  lbs.

In 1847, the produce of butter was  $4\frac{1}{2}$  lbs. to each.

In 1851, the produce of butter was  $19\frac{1}{2}$  lbs. to each.

As the population of these Counties are chiefly agriculturists, the above calculations are allowable, and just inferences may be drawn from them.

Not being in possession of all the statistics, the average produce of grain per acre throughout the Counties cannot be ascertained, with the exception of wheat, which in 1847 averaged 10 bushels per acre, and in 1851, 17 bushels per acre.

It should be observed, however, that the year 1851 was a very productive season, and therefore some allowance must be made for this. But looking at the statistics as a whole, there is just



reason for considering the Agriculture of these United Counties in a very prosperous and rapidly advancing condition, and that they will not suffer by comparison in this department with any other County of this Province under similar circumstances.

Your Board would now turn to their own immediate department, and report upon the state of your Society, and its operations during the past year.

Your Board are glad to find by comparison, that the average number of successful competitors at the shows are increasing. Thus at the fall show of 1845, the number of premiums given was 45, the number of individuals who took these, 17—being at the rate of over  $2\frac{1}{2}$  prizes to each person. In the fall show of 1846 the number of premiums given was 50, number of individuals obtaining these 21—at the rate of a little over  $2\frac{1}{2}$  prizes to each; at the Fall show of 1849, 49 premiums were awarded to 22 individuals, being at the rate of a little more than 2 prizes to each. At the Fall Show of 1850, 53 premiums were given to 31 individuals, being at the rate of about  $1\frac{3}{4}$  prizes to each. In the fall of 1852, 59 premiums were given to 35 persons—being at the rate of a fraction less than  $1\frac{1}{4}$  to each.

The more general distribution of prizes, as seen from the above, is another evidence of the improvement of these Counties, because it shews that superior stock and articles of produce are not confined to the few, but scattered over the country. Your Board feel confident that the efforts of your Society have more or less contributed to this by offering premiums, and thus stimulating to emulation and laudable competition.

Your Board are happy to find the increased cultivation of root crops and clover becoming so general throughout the County, as it is an acknowledged fact that in those countries which stand highest in their agricultural position, particular attention is paid to the growth of root crops and clover; because by this means a greater quantity of stock is kept, and in much better condition, from the same amount of land, and thus a greater quantity of manure is obtained, as well as superior in quality, by which the fertility of the soil is increased. Your Board beg attention to the marked improvement in plowing, so very evident at our last ploughing match. The workmanship was so uniformly good that the judges had great difficulty in awarding the prizes. This, together with the great interest in the competition manifested by spectators, indicate an increased and general attention to this most important department in the operation of the farmer. Your Society here claims a mede of praise, for to its exertions this improvement may be more or less attributed.

Without strict attention to good plowing we cannot calculate upon productive lands.

Your Society purchased last spring 10 bushels of the Early Warwick Pea, which were given to two individuals, with the condition that the produce was to be returned to the Society, at 3s. per bushel, reserving 5 bushels for themselves. The parties report favourably of this seed. They have returned upwards of 65 bushels, which is at the disposal of your Society.

Your Board also purchased clover seed and plaster, and sold at cost. A loss has been sustained by this transaction, as seen in the Treasurer's account.

Small lots of long clover seed, carrot seed, and mangold wurtzel seed were purchased, of which there is still a considerable proportion on hand. Your Board have during the past fall purchased 384 bbls. Plaster, which is now ready for delivery at Port Hope.

Your Board, in order to disseminate useful information, have given the Canadian Agriculturist to each member of your Society.

The number of members in your Society is 153. £58 9s. 6d. have been expended in premiums.

In accordance with the Agricultural Act, the Otonabee, Emily, and Dummer Township Societies have sent in their reports for the past year. The Report of the Otonabee Society was then read by the Secretary, on which the Board made the following remarks:

From this Report it would appear that a portion of the funds of the Otonabee Society have been expended in premiums for plowing. It is to be hoped that the benefits so sure to result from this course will soon remove the opposition which has hitherto existed, and that it will meet with a cordial support. Your Board regret that the laudable attempt to introduce subsoil plowing has not been so successful as could be wished, but hope a future trial will confirm the opinion so universally entertained of this valuable implement. The Report also mentions the establishment of a Farmers' Club for the discussion of agricultural subject, &c. An example is here given worthy of being followed, where practicable, by every agricultural community. Much good has resulted from these institutions, and we wish the Otonabee Farmers' Club every success and long continued support. On the other reports, simply consisting of the names of members, the Treasurer's account, and the Office-bearers for the present year, no remarks could be made.

I hereby certify that the above is a true and correct copy of the Report of the County of Peterboro' Agricultural Society for the year 1852.

JOHN W. GILMOUR,

Secretary of C. P. Ag. Sy.

Peterboro', March 3d, 1853.

## BALANCE SHEET.

Dr.		COUNTY OF PETERBORO' AGRICULTURAL SOCIETY IN ACCOUNT WITH TREASURER.						Cr.		
		£	s.	d.	£	s.	d.			
1852.					1852.			£	s.	d.
Jan. 10	To Cash pd. Haslehurst for Printing .....				Jan. 1	By Balance at this date .....		50	17	6
" 16	.. Mariposa Br. deposit ..	21	5	0	April 1	.. Otonabee and Asphodel Br'ch ..		29	10	0
" "	.. do do. grant. ....	28	0	0	May 1	.. Emily Branch .....		25	0	0
" "					" "	.. Ops do. ....		34	0	0
" "	.. Paper pr. J. Gilmour ..				" "	.. Mariposa do. ....		21	10	0
March 22	.. 130 'Agriculturists' ..	16	5	0	Sept. 25	.. Government Grant .....		250	0	0
" "	.. Bank for Draft. ....	0	1	3	" "	.. 373 Plaster .....		107	12	3
" "					" "	.. 7552 Clover Seed .....		99	11	8
" "	.. Postage for 12 mos. for Agricul. papers ..				" "	.. 6 lbs. Turnip Seed .....		0	12	4½
April 2	.. E. Powell Long Clover ..				" "	.. 57½ Long Clover Seed .....		2	3	3
May 15	.. J. Stevenson, Clover Seed .....				" "	.. 1 lb. Carrot Seed .....		0	5	0
June 10	.. Bletcher & Brothers, Plaster .....				" "	.. ¼ lb. Mangold Wurtzel .....				
" 22	.. John Wade, per acc. ....				" "	.. Subscription for 1851 .....		38	0	0
" "	.. Draft .....				1853.					
Sept. 25	.. Bank for transmitting Money .....				Feb. 4	.. Jas. Stevenson, Balance of Clover Seed .....		4	15	3
Oct. 5	.. Emily Bran. Deposit ..	25	0	0	" "	.. Balance due Treasurer .....		40	15	5
" "	.. Government Grant ..	28	13	4						
" 27	.. Mariposa Deposit ..	21	10	0						
" "	.. Government Grant ..	24	0	0						
" 29	.. Ops Deposit .....	34	0	0						
" "	.. Government Grant ..	39	0	0						
Nov. 20	.. Otonabee Deposit ..	29	10	0						
" "	.. Government Grant ..	33	5	0						
" "										
" "	.. Premiums, Spring ..									
" "	.. Do. Fall .....									
" "	.. J. Hamilton, Build. and removing Pens ..									
" "	.. Paper 7½ d., 4 yards Ribbon at 3d. ....									
1853.	.. J. Bletcher, Plaster ..									
Jan. 5	.. Do. Balance of old Plaster .....									
" 22	.. J. W. Gilmour for 6 dinners (Judges) ..									
" 24	.. Prov. Ag. Society ..									
" "	.. Draft for ditto ..									

To Balance due Treasurer. ... 40 15 5

JNO. W. GILMOUR, *Secretary.*

## OFFICERS.

JOHN WALTON, *President.*  
 JOHN HARVEY, *Vice-President.*  
 THOS. BELL, *Vice-Vice-President.*  
 JOHN W. GILMOUR, *Secretary.*  
 ROBERT NICHOLS, *Treasurer.*

## Directors.

Wm. H. Moore, L. Davies,  
 E. Mann, John R. Milburn,  
 J. Milburn, Joseph Walton,  
 Adam Hall.

JNO. W. GILMOUR,  
*Sec C. P. Ag. Sy.*

## TOWNSHIP OR BRANCH SOCIETIES.

The Secretary of the County of Peterboro Society has transmitted Reports, with lists of members, &c., of five branch Societies, viz: the Otonabee, the Ops, the Emily, the Asphodel, and the Dummer Branch Societies.

*The Asphodel Branch.*

This is a new Society, organized the present year under the New Act, and numbers 86 Subscribers at 5s. each.

The following persons were appointed Officers of the said Society for the year 1853.

WM. SCOTT, Sen., *President.*  
 PATRICK CAMERON, Esq., *Vice-President.*  
 WILLIAM BURK, *Trea. & Sec.*



*Directors :*

David Burgess,	Alexander Nichol,
Thomas Spiers,	Thomas Hanston,
Walter Scott,	John Elliott,
Henry Franks, Esq.,	Robert Morrison,
	John Robb.

*The Dummer Branch.*

The Agricultural Society of the Township of Dummer and Duro, held their Annual Meeting at Warsaw on the 11th January, 1853, at which meeting the following Officers and Directors were appointed.

JOHN FERRIER, Sen.,	<i>President.</i>
ALEX. ESPLINE,	<i>Vice-President.</i>
JOHN ROSE,	<i>Secretary.</i>
THOMAS CHOAT,	<i>Treasurer.</i>

*Directors :*

John Sullivan,	William Wigmore,
Lazarus Pryne,	Watts Teigh,
Charles Peters,	John Ferrier, jr.,
John Wason,	Sampson Lukey,
	Joseph Graut.

Number of Subscribers in list transmitted—48, at 5s. each. No report of previous transactions transmitted.

*Emily Branch.*

At the Annual Meeting of the Emily Branch Agricultural Society held at Edward Blackwell's Hotel, on Monday the 19th day of January, 1852, the following persons were appointed Officers for the ensuing year.

WM. LAIDLAY,	<i>President.</i>
THOMAS CRAWFORD,	<i>Vice-President.</i>
WILLIAM COTTINGHAM,	<i>Secretary.</i>
ARTHUR McQUADE,	<i>Treasurer.</i>

*Committee of Management :*

C. Knowlson,	Wm. Cottingham,
William Best,	James Laidly,
Thomas Fee,	Daniel Scully,
A. Thoraton,	William Lang,
Henry Moore,	Matthew Willson,
John Irons,	J. W. Blaylock,
William Davidson,	Thomas Mitchell, jr.

The Society numbers 65 members, subscribing among them £25, in sums varying from 5s. to 20s. each. Their funds for the year 1852 consisted of—

Members subscription as above . . . . .	£25 0 0
Portion of Government grant received from County Society. . . . .	28 3 4
	<hr/> £53 3 4

Expenditure in Premiums, &c., during the year 1852, £16 1 7½	
Leaving a balance in the Treasurer's hands, proposed to be expended in the purchase of Clover Seed of . . . . .	£27 1 8½

*Ops Branch.*

The following is an abstract of the report transmitted by the Secretary of this Society to the Secretary of the County Society.

The Committee of the Ops Branch, Agricultural Society, have great satisfaction in reporting the success that has attended their exertions dur-

ing the past year, their subscription list having swelled from eighty members the previous year, to one hundred and twenty-nine members the past year. Strict attention has been principally directed to improving the seeds, as hitherto, considering this to be the only way to cause the Farmers to take an interest in Agricultural Associations. During the past year, they have purchased twenty-two bushels of clover seed, three hundred and ninety-six papers of garden seed, thirty-four pounds of Swedish turnip seed, and sixty-five bushels of a new kind of Fall Wheat, and distributed them among the members free of charge. Their attention has been also directed to the improvement of stock, for which purpose they purchased, for the use of the Society, a valuable Boar, at the Provincial Exhibition; they have also distributed the sum of ten pounds in premiums at their Annual Show, all of which is respectfully submitted.

Their Annual Meeting was held on 22nd of January, and the Officers elected were Thomas Ray, President; John Gill, Vice President; and G. M. Roche, Secretary and Treasurer. Andrew Hull, Thomas Kinnon, D. McDonald, Thomas R. Adams, James Blackwell, John Mitchell, Thomas Birr, Cornelius Hogan, J. O. Leary, Directors for the current year.

The Treasurer's balance thus condensed, exhibits the receipts and expenditure of the Society for the past year as follows:—

1852.

Jan. 24. Amount of Cash on hand, . . .	£25 19 3
April 39. " Received from 129 paid up members, . . .	34 10 0
July 29. " Received from President. . . . .	29 10 8
Oct. 29. Government Grant and deposit, . . . . .	73 0 0

1852

CONTRA.

£162 19 11

Feb. 17. Paid for Clover seed, . . .	£15 0 0
" " Deposited with Treasurer	34 0 0
" " Appropriated to purchase of Seed Wheat. . . . .	23 4 7
Sept. 20. Retiring President's note, . . .	30 0 0

1853.

Jan. 20. Paid in Premiums, . . . . .	10 0 0
" " Other expenditure for seeds, expenses, &c., during the year, . . . . .	25 14 11½

£137 19 6½

Jan. 22. Balance on hand, . . . . .	25 0 4½
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£161 19 11

*Olenabee Branch.*

This Branch Society held its annual meeting on the 20th January 1853, when the following Report was submitted and adopted:—

" This society has been established nine years, and had a respectable list of subscribers during that time; and has been the means of introducing into the townships many improved varieties of grain, which have materially bettered our sample. Also, of importing superior Bulls, Sheep, Berkshire and other pigs, and have purchased several

varieties of plows, but found none better adapted to general use than those made in the vicinity.

A subsoil plow was also purchased for the use of members, which was used by several farmers without any good result.

The society has endeavoured to advance the march of intellect by disseminating agricultural publications at a low price to those who choose to take them. It has not hitherto thought it advisable to give premiums for the best breeds of stock; as only a few members possessed superior animals, and it would be putting money into the pockets of those few, to the exclusion of the poorer members; hence the Directors deemed it more equitable to offer rewards only for such articles as all could compete for; such as butter, cheese, fulled cloth, flannel, &c.: Yet even this arrangement did not give general satisfaction, and the funds of the society have been in a great measure applied to the purchase of plaster, and clover, turnip, carrot, mangle wurtzel and other seeds.

The purchase of clover seed by the society has been the means of placing it within the reach of all, and thereby causing a much greater quantity to be sown, and consequently the condition of the land much improved and the farmers benefited in proportion.

During the past year the Directors have succeeded (after much opposition) in getting up a Plowing Match, which was well contested and attended, and from the interest it excited is likely to be continued. In Ottonabee there is no part of practical farming that requires reformation more than this, for owing to too much of the land being new, few young men have had a fair field in which they could become proficient.

The Directors have also imported from the Messrs. Wade and other noted breeders, a number of improved Leicester Rams, to supplant the Merinos, which the Society introduced some years ago, and which are not now generally approved of. These with some swine, were sold by auction to members, as the Treasurer's report will show, at a loss to the Society.

The Directors seeing the disadvantages arising from the want of social intercourse amongst farmers in this township, owing to the few opportunities they had of associating with each other, resolved to form a Farmers' Club, and invited their brother farmers to assemble monthly during winter to discuss agricultural subjects, and the call has been cordially responded to and promises to become popular and interesting.

On the whole farming here is performed on more scientific principles than it was formerly; a good deal of draining has been done, and more root crops grown, and there is a growing disposition to raise improved stock, and grain of all kinds; but the high price paid for labor and scarcity of laborers, is a great disadvantage to farmers; and hinders many improvements which would otherwise be effected.

The following gentlemen were then appointed Officers of the Society for the present year.

ROGER BATES, Esq., *President.*  
 PETER McNEIL, Esq., *Vice-President.*  
 HENRY BAWBELL, Esq., *Secretary.*  
 THOMAS SHORT, Esq., *Treasurer.*

And Nine Directors

The Society according to the statement submitted by the Secretary and Treasurer numbers 125 members subscribing 5 shilling each.

Amount of Receipts for the year 1852—

125 subscribers at 5s. each, . . . .	£31	5	0
Received from County Treasurer, deposit and Government Grant, . . . .	62	15	0
Sundries, . . . . .	4	14	4½
	£98	14	4½

#### EXPENDITURE.

Remitted to Co'y Treas'r, £29 10 0	
Appropriated to purchase of Stock, . . . . .	52 15 0
Sundry expenses, &c. . . . .	15 5 7

1853. . . . . £97 10 7

Jan. 20. Balance on hand in Cash, £ 1 3 9	
" " " in notes of hand for Stock imported by the Society and sold to members, . . . . .	25 18 9½
	£27 2 6½

## The Agriculturist.

TORONTO MAY, 1853.

### AGRICULTURAL EDUCATION.

We think it our duty to invite the special attention of our readers to the report of the Hamilton Farmers' Club, contained in the present number. It is truly a hopeful sign of the times when the question of Agricultural Education is taken up and discussed in a comprehensive and earnest spirit by the farmers themselves. The members of the Hamilton Farmers' Club have done themselves both credit and honor for the intelligence, sound judgment, and correct feeling which they manifested in the discussion of a question in which their dearest interests and those of their children are alike deeply involved. Without professing to subscribe to every opinion espoused, or statement made, in the course of the debate—if that can be correctly termed a debate in which all the speakers, so far as great principles are concerned, were perfectly agreed—we think that Mr. Wade and his coadjutors have done a good service to the cause of a sound, natural progression among their brother cultivators of the soil. Mr. Wade is a man of intelligence, and one of our best and most enterprising farmers, who, while he can properly estimate the indispensable importance of practical knowledge to the agriculturist, does not overlook or depreciate the value of that collateral aid which science and general mental culture impart to those that are engaged in the cultivation of the soil. It makes us feel proud of our adopted country when we find several speakers expressing their deep regret that it was their hard lot



in early life to have had only very scanty means of education, but professing the most ardent and praiseworthy desire to give their children, and the rising generation at large, the fullest practicable draughts at the refreshing fountain of knowledge. Such facts and sentiments speak loudly in favour of Canada. They show that men with scanty means and information by coming to this country can, by persevering industry, obtain honorably a sufficient worldly competence and a higher social status in the advancing scale of civilization. Whenever a man avows an earnest desire to afford his children more ample means of mental and moral culture than he enjoyed himself, it is a demonstrative proof that he is conscientiously alive to one of the greatest and most responsible obligations involved in the parental relation. Farmers of Canada, we tell you plainly, that neither yourselves nor children will ever attain that position in society to which your numbers, industry, and wealth entitle you, *till your class enjoys equal means of education with all other classes of the community*. That those who raise from the soil the daily bread of the people, whose industry supplies the greatest portion of the materials of national wealth, and whose sinewy arms, prompted by loyal and patriotic hearts, have in all ages of the world's history proved the best safeguard of a country's safety and independence,—that this large and important class of men should be doomed, generation after generation, to have doled out to them the merest modicum of education, is a perfect social anomaly, and what an advancing civilization will but little longer endure. The present age is distinguished, among other things, for a liberal and scientific culture of the soil: Can it therefore be tolerated, in any country professing itself Christian and civilized, that the *immortal minds* of a large proportion of the tillers of the earth, as is unhappily the case at present in all countries, should receive comparatively no culture, and be allowed to remain almost a total blank? Christianity, humanity, aye, and *true policy*, one and all, return to the question an imperious and indignant negative.

But it is asked, how is a suitable education, general and special, to be given to the rising generation of farmers? The answer is by no means a difficult one; that is to say, there are no *peculiar* difficulties, either theoretically or practically attendant on educating farmers, any more than on the other classes of which modern society consists.

The children of farmers require, in the first place, a similar mental training, and the same subjects taught them, as the children of other classes. We are not among those who entertain any fears that young people intended for agri-

cultural pursuits can be taught too much. Polite literature, or some acquaintance with modern languages, or even a dead one, would certainly not necessarily make them in after life worse cultivators of the soil; while a means would be afforded them of pure rational enjoyment. However, be this as it may, it is evident that the children of farmers must be educated in the same way, and by the same means, and in the same places, as the children of other classes, viz., in the ordinary schools, colleges, and universities of the country. The mere mention of the last two places in connection with the education of farmers will cause, we are aware, distrust or astonishment among some of the antiquated school; but what subjects are there, we would humbly ask, taught even in our highest seats of learning, which would be unbecoming or injurious for a farmer to learn, provided he had time and inclination (natural ability, we presume, he will be allowed to possess, in common with others) to pursue them? A knowledge of the exact and experimental sciences—such as mathematics, natural philosophy, chemistry, animal and vegetable physiology, &c.—must certainly tend, in connection, with his daily experience, to make him a more *intelligent*, at least, if not a more successful cultivator of the soil.

For the purposes of a *general* education, our existing schools and colleges are as well suited to those intended for agriculture as any other of the pursuits of life. And we go further—and herein we differ from some of the speakers of the Hamilton Club—and maintain that these institutions, with some slight modifications, or rather additions, not over difficult, we think, to be made, might, to a very great extent at least, be rendered subservient to the *specific* education of our agricultural youth.

In Grammar Schools and Colleges it would be comparatively easy to make an application to the principles and practice of agriculture of the facts and doctrines of experimental science; and a few acres of land, or even a large garden, would be sufficient, under a competent instructor, to afford an intelligent youth a pretty clear and comprehensive idea of the connection between science and agriculture, and of the light which the former often imparts to the latter. We would advance a step further, and apply the same remarks to our common schools, where in fact, Agricultural Education ought to begin. It will be in vain to look for crowded halls in the higher seats of learning, if the Common Schools of the country are neglected or unappreciated. From the very nature of circumstances, such schools must educate the masses, if they are educated at all; and therefore it is that Common School education, in a country like this, especially demands a primary consideration.

And here we may observe that our progress and position are, in no inferior degree, encouraging and satisfactory. The claims of agriculture are already recognized by the present system of Common School Education. The study of chemistry, mechanics, animal and vegetable physiology, has, for several years past, formed a part of the training of teachers in the Provincial Normal School, in this city; and our excellent Governor General, the warm and steady patron of learning, has, from the commencement, we believe, of the institution, given half-yearly prizes for the two students who undergo the best examination in those subjects. The leaven has, therefore, commenced working in the right place, and it has already reached the Provincial University, and it will go on spreading, we trust, until the whole mass of the agricultural community is penetrated by its salutary influence.

As to separate schools for educating those who are destined for Agriculture, in connection with extensive model and experimental farms, the scheme, we think, is quite impracticable in this country. Indeed, such establishments in Europe have met with but very limited success, and have seldom been self-supporting. In Canada we require the principles of Agriculture to be taught in the existing educational institutions from the lowest to the highest, and a comparatively small quantity of ground will be in most cases found sufficient for illustrative and experimental purposes. The labor and expense of engrafting Agricultural Institutions on our present systems of schools and colleges, would not be attended by any serious or impracticable difficulties; and it is much to be desired that such an addition would be speedily made.

We had no other intention when we commenced than simply to recommend the reader's attention to the subject, as treated by the Hamilton Farmers' Club. Our sympathies, however, became elicited in its enforcement and elucidation, and we now leave our hastily written, and perhaps desultory remarks, to the candid consideration of such as feel interested in the intellectual and social improvement of the rural population.

#### BOARD OF AGRICULTURE OF LOWER CANADA.

We learn from the April number of the "Lower Canada Agricultural Journal," that this Board was regularly organized on the 28th of March. The Hon. Malcolm Cameron, Minister of Agriculture, went from Quebec to Montreal to assist in the arrangements. During six sittings, most important business appears to have been done. Besides the consideration of Certificates from a number of Agricultural So-

cieties, with a view to organization, most of which were approved, we observe several matters which possess a general interest. It was resolved:

"That an Exhibition be held in or near the City of Montreal, on the 27th, 28th, 29th, and 30th of September next."

This Exhibition will be to the Lower Province what the Provincial Show is to the Upper. The new Agricultural Statute throws open *both* Exhibitions to competitors residing in any part of United Canada. This new feature our readers will do well to notice, as a friendly and beneficial competition, to a limited extent, will no doubt result from such a condition.

It was further resolved:

"That two premiums be offered, fifty pounds currency for the best, and thirty pounds currency for the second best, reaping and mowing machines, from any country, to be proved near Montreal, on the second Wednesday of August, 1854; and that the Secretary be required to use his best exertions to have notices of this Resolution published as widely as possible, by requesting the different papers of the United States, Canada, and Great Britain to notice it every three months. Parties desirous of competing for these Premiums must notify their intention to the Secretary of the Board of Agriculture for Lower Canada, not later than the 1st of May, 1854. This Board reserves to itself the right of cancelling these premiums by sending notice to the parties intending to compete, should not a sufficient number of competitors declare themselves."

Major Campell was unanimously elected President of the Board; Alfred Pisoneault, Esq., Vice-President; and William Evans, Esq., Secretary and Treasurer.

#### RETIREMENT OF MR. EVANS

AS EDITOR OF THE LOWER CANADA AGRICULTURAL JOURNAL.

From the last number of our valuable cotemporary we learn that the gentleman who has conducted it from its commencement is about retiring from his editorial duties. Mr. EVANS has been known for many years in Canada as a useful practical writer on agricultural subjects, and his extensive observation and experience in Canadian farming, give to his writings an authoritative value, particularly in the Lower Province. We never was disappointed in looking into the Journal for sound, common sense, advice and opinions on the various practical subjects of agriculture, and we hope that under the new arrangements its character will not suffer in this respect. We are glad to see that Mr. EVANS has been appointed to the Secretaryship of the newly organized Board of Agriculture. His long previous experience acquired in a very similar situation, will no doubt enable him to perform the duties of the new office with credit



to himself and much satisfaction and benefit to the country.

At a meeting for organizing the Board of Agriculture for Lower Canada, it is stated, that Mr. EVANS having respectfully declined taking the publication of the Journal upon the terms proposed, it was unanimously resolved,

"That the Members of the Board regretting that Mr. Evans has not been able to accept the conditions under which the publication of the Agricultural Journal was to be continued, are anxious to express their sense of the enthusiasm and diligence, the zeal and fidelity which Mr. Evans has evinced in his endeavour to sustain the Journal and make it efficient, and they therefore tender him their sincere thanks, and the gratitude of those they represent. Nevertheless, they feel that in order to encourage the progress of the Country, and the improvements in Agriculture, it is necessary that a publication should be established worthy of our present agricultural prospects, it is therefore recommended that the Vice-President and Messrs. Dods and Thompson be a Committee to make any arrangement that may be necessary to ensure such a publication."

This subjoined valedictory address, taken from the April number of the Journal, will be read with interest by many of our readers :—

It would be ungrateful to retire from the management of the Agricultural Journal without offering our most sincere thanks for the kind indulgence that has been extended to us, notwithstanding the many errors and mistakes we must have committed, during a period of nearly six years that we have acted, unaided, as editor of that periodical. Not only in regard to the Agricultural Journal have we to return thanks, but for the kindness and forbearance we experienced for a period of nearly twenty years, previous to the publication of this Journal, that we have been writing and publishing on the subject of Agriculture. We have always been conscious of our numerous deficiencies, but we endeavoured to make amends for them by the most zealous and unremitting devotion to the important interests we presumed to advocate. We suppose it was because we had the courage to come forward alone to advocate interests that were of so much importance to the Canadian people generally, that our errors and other deficiencies were allowed to pass without censure. Not only without censure, but we have been so fortunate as to obtain on numerous occasions, unqualified approbation for our humble efforts; both from the press; and from private individuals of all classes, from whom we have received some hundreds of letters of approval and encouragement, in the most flattering terms. It was a constant source of regret to us, that we were not possessed of higher qualifications, in order that we might be better able to do justice to the cause we endeavoured to advocate.

We never attempted any high flights, or pretended to any endowments, more than plain common sense, and a thorough knowledge of the theory and practice of Agriculture, so essential, above all other qualifications, to conduct usefully an agricultural publication.

This knowledge we were fortunate enough to have acquired in the Old Country, where we were extensively engaged in agriculture from an early age; and in Canada, though not so extensively, for a period of 35 years. We can with the greatest truth declare that we have constantly endeavoured to make all that we know on agriculture, or could learn from any source, useful to agriculturists, by submitting it for their consideration, in the plainest terms; and we have also most carefully excluded all exaggerated statements that could have any tendency to lead them into error. Our practical knowledge of agriculture gave us a great advantage in making selections for the Journal, and prevented us from recommending any defective system of husbandry. If we had only desired to fill up the columns of the Journal, we had abundance of matter to copy from other periodicals; but in numerous instances even from periodicals of high character we could not find a line suitable to the circumstances of Canada, to copy in the Journal, and had to substitute our own ideas, as we had few correspondents. We allude to these circumstances in order to show that editors have some difficulties to contend with in their endeavors to be useful, and please their readers.

We can assure our friends that the very best services we were capable of rendering were sincerely devoted to them, and we hope they will pardon any offence we may have unintentionally given at any time.

However anxious we have been to see necessary improvements introduced in the system of Agriculture in Canada, we never attempted to recommend a change, by unqualified condemnation of the system of husbandry, live stock, and implements that were already established in the country. We endeavoured rather to demonstrate where the system was defective, and how it might be improved. With the greatest satisfaction we admitted the suitableness of many of the implements in use, the excellent qualities of the Canadian horse, the many good qualities of the Canadian cow, and the perfect practicability of improving the breed, and also of improving the breed of sheep, by crossing with the Leicester English breed, and this cross we have seen produce an excellent description of sheep.

We had come to the conclusion long ago, that in visiting any strange country, inhabited by a civilised population, their habits, customs &c., however, different from those we were accustomed to previously, and thought superior to any in the world, must in many instances be the best adapted, and most suitable for their state and circumstances, and that we should not attempt to abrogate them without great caution, and the most careful investigation, into both their merits, and defects. We have often seen innovations proposed that appeared very plausible, but subsequently proved complete failures, and was very injurious to the progress of real improvements. We intended our mission more to the French Canadian Farmers; than to any other class, and they have our most grateful thanks for the confidence they always manifested towards us.

With the feelings of attachment to agriculture which has ever actuated us, and "have grown

with our growth, and strengthened with our strength," had we been possessed of the highest order of talent that ever man was endowed with and improved by the best education that could be acquired, we should have devoted our whole energies to the cause of Agriculture, as sincerely as we have done, with our humble acquirements. Had we higher endowments, we presume we should have been able to effect much more good with less labour to ourselves.

Our sincerity may, perhaps, be questioned, when we say, that whatever might have been our acquirements, we should have adopted the most plain and simple language on agricultural subjects. It is a subject of too much importance to the human race to require any high flights of eloquence, to advocate its improvements and interests. There is not much occasion for display of eloquence in describing the quality of the soil, the manure-heap, the operation of ploughing and harrowing, planting and digging potatoes, sowing and harvesting grain, &c. Eloquent terms would be mis-applied in describing the perfection of a pig, a sheep, or a cow, though not perhaps in describing a war-horse. There does not exist a more ardent admirer of agriculture and a country life than we are, but it was not any eloquent terms we have seen employed in reference to them that attached us to it, but from early habits, being engaged in the business from our youth, and necessarily a residence in the country constantly—surrounded by the works of the Creator in every variety, and in their most surprising, and pleasing forms. We have ever looked upon the Bible description of the Creation as simplicity itself, and an example of simple eloquence, and any party who has attempted what they conceived to be more eloquent terms of description of this event, have miserably failed, and so they ought. It is the greatest presumption for man to attempt to make the works of the Creator appear in a more glorious light, by describing them in terms chosen by themselves, rather than in the language of the Bible. Who could see the rising and the setting sun, and be persuaded, that any written description of it, could equal the reality of its glorious beauty. We may be considered an enthusiast, but it is our pride and delight to be so on this subject, though on no other.

In retiring from our post as editor to the Agricultural Journal, we regret that improved husbandry is not more advanced. There is one consolation, however, that agriculture is now in an infinitely more favourable position in Canada than it ever was before, and that improvement has commenced, and is making very satisfactory progress. The prospects for agriculturists are much better now, than for many years past. There is now a Minister of Agriculture, disposed to do every thing to promote the prosperity of that interest. There is a Bureau of Agriculture—and a Board of Agriculture—all concessions made to Agriculturists, that are of the greatest importance and cannot fail to have a most beneficial influence upon the Agriculture of Canada, no matter who may think to the contrary, and we rejoice that we have been the humble advocate of these measures. We retire from the conduct of the

Agricultural Journal, with the same good wishes for the prosperity of Canadian Agriculture that we have constantly entertained. The Journal in a new form, under a new title, and management and at a reduction of price from five shillings to two, cannot fail to have a greatly increased circulation. We wish it all possible prosperity, and that it may be the means of greatly promoting the improvement of Agriculture in a country that is dear to us, and whose prosperity we hope to see increasing every day we exist. We would not inflict such a long address upon the subscribers, but we conceive it is proper at finally parting, to give a full explanation of our motives and conduct in the management of the Journal, as well as all our other publications. And now we bid our friends farewell, assuring them, that if in our new capacity of Secretary and Treasurer of the Board of Agriculture, we can be of the slightest use to them, they may always command our humble services.

#### TORONTO HORTICULTURAL SOCIETY.

We have much pleasure in learning that this society has been re-organized, and that its prospects of permanent prosperity are quite encouraging. Toronto has now a number of professional gardeners and zealous amateurs; and as the society is now restricted to a narrow section, tho' its prizes may be competed for by persons residing in any portion of the Province, an extensive support may be reasonably anticipated. Gardening in all its departments is a delightful and healthful pursuit, and is eminently calculated to form correct habits of observation; to elevate the taste and moral feelings and to prepare the mind for the appreciation of the lovely and beautiful in nature among its earnest cultivators. It is a pursuit peculiarly adapted to the ladies, who would be sure to find their health and sentiments improved by the cultivation, study and arrangement of flowers. We trust all our fair readers will take this seasonable hint. The Toronto Society intend holding three exhibitions during the season; the first will take place on Thursday, June 2nd, and we trust that this renewed attempt to promote the love and interests of gardening, in all its branches will meet with a prompt and generous support.

#### LECTURES ON AGRICULTURE IN THE UNIVERSITY OF TORONTO.

A number of Students belonging to Knox's College and the Congregational Theological Institute, who attended Professor Buckland's lectures during the past winter, presented the Professor, at the last meeting before they separated, with a copy of Dr. Mantell's beautifully illustrated work on Geology, entitled "THE MEDALS OF CREA-



TION," in 2 vols. Incidents of this nature are worth recording, if it were only to show that sincere and judiciously directed attempts to diffuse agricultural knowledge and improvement, even among such as are not likely to engage in agriculture, as a business pursuit, do not fail to be appreciated. A more practical course has been given to a class consisting of individuals actually engaged in farming, and the experience acquired by these experimental trials, is such as to stimulate the Professor to increased and more systematic efforts next winter. During the summer it is proposed to give field instruction on the Experimental Farm attached to the University grounds, and by visiting farms in the neighborhood.

The following is the inscription written on the fly leaf:—

PRESENTED TO  
PROFESSOR BUCKLAND,  
AS A MARK OF THEIR HIGH APPRECIATION OF HIS  
PRELECTIONS ON AGRICULTURAL CHEMISTRY,  
BY THOSE STUDENTS OF KNOX'S COLLEGE,  
AND THOSE OF THE CONGREGATIONAL  
SEMINARY, WHO ATTENDED HIS  
COURSE OF LECTURES DURING  
THE SESSION OF  
1852 AND 1853.

Toronto, April 1853.

#### NORMAL AND MODEL SCHOOLS.

The public examination of the Provincial Normal School was held on the 14th of April. The pupils were examined in geometry, algebra, English grammar, agricultural chemistry, natural philosophy, arithmetic, geography and history, by Messrs. Robertson, McCallum, Sangster, Fripp, and Robins, assisted by Professors Croft and Buckland. The Governor General's prizes for Agricultural Chemistry were given to the successful candidates, Mr. Benjamin Charlton, of Brant County, and Samuel Rathwell, of Carlton County, by Chief Justice Robinson, accompanied with a few appropriate remarks. The examination of the Model Schools, conducted by their respective teachers, took place on the 15th and 16th, but want of space prevents us from giving a detailed account of the different classes, the state of this noble institution and its system of teaching—the good effects of which are already felt throughout the country:

#### CANADIAN INSTITUTE.

On Saturday, 2nd April, the members of the Canadian Institute held their Annual Conversation in the hall of the Legislative Assembly in this city. The President, Capt. Lefroy, R.A.,

in the chair. The meeting was large, most of the literary and scientific gentlemen of the city being present. Refreshments of a very substantial nature were served in the lobby of the House. An interesting paper was read by Mr. Justice Draper on the Progress of Canada, another by Prof. Hodder, on the poisonous plants found in the vicinity of Toronto, another by the Rev. Mr. Scadding on the accidental discoveries in Science and Art; Rev. Prof. Irving gave an explanatory lecture on the Stereoscope. In the course of the evening, Prof. Cherriman, in the name of the members, presented Captain Lefroy, who was about to leave for England, with a beautiful piece of silver plate, as a token of respect for the benefits science has derived from his unwearied services during his stay amongst them, also expressing their deep regret at the decision of the British Government in removing him.—The meeting was afterwards briefly addressed by Dr. McCaul, Principal of Toronto University, and T. Henning, Esq.; but owing to the lateness of the evening, the meeting was soon afterwards brought to a close.

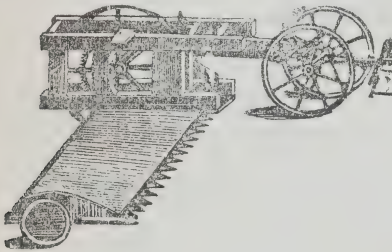
#### REAPING MACHINES.

As farms improve under the cultivating process, and as labor grows dearer through the competition of railroads, canals, and manufactures—the construction and working of which will necessarily absorb a large portion of the manual labor of the country,—it is very evident that Farmers will be obliged to avail themselves of labor-saving machines to a much larger extent than heretofore.

In many parts of Canada the "Reaper" can even now be used to great advantage. It has been introduced, and, we believe, has been found to work satisfactorily in this and the neighboring Counties. We would advise those farmers whose land is tolerably smooth, and who raise large crops of grain, to make inquiries in regard to these machines before the ensuing harvest.—They should be careful to select the best; and no test is so reliable as *actual experiment*. We will not attempt to decide as to the respective merits of the two principal Reapers now before the public, viz.—Hussey's, and McCormick's. They are probably both good machines, but adapted to somewhat different circumstances.—We believe in the State of New York the preference is given to Hussey's. In the West, it appears, McCormick's is most popular. At the Great Exhibition in England, these two Reapers

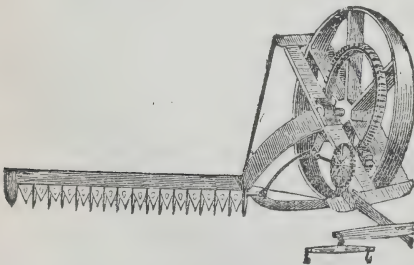
tracted considerable attention and were subjected to several trials. It was there decided that McCormick's Reaper performed its work best. The grain was heavy, and on one occasion wet; the surface of the field was also uneven, and under these adverse conditions, it is possible that McCormick's Reaper is superior to the other. It was alleged, however, that Hussey's was not properly managed. We are not inclined to place much dependence on these trials as a guide to the Canadian purchaser. We have seen one of Hussey's machines work well, and one of McCormick's very ill. The surest plan is for each purchaser to satisfy himself by personal inquiry. We should think the Board of Agriculture might with great propriety—indeed this is one of the duties the Legislature has prescribed for them—import a sample of the various Reapers in use among our neighbors, and subject them to a fair trial on Canadian ground. The result of such a trial might prevent much loss and vexation to the farmers of the country.

HUSSEY &amp; BURRALL'S IMPROVED REAPING MACHINE.



The above is a cut of Hussey's Reaper, for which orders may be left at McIntosh & Walton's in this city.

KETCHUM'S MOWING MACHINE.



A good Mowing machine is nearly as great a desideratum as a Grain Reaper. The above has now been some time in use by the farmers of New York State, but as it is only adapted to a very smooth surface, it has not fully met public expectation. Perhaps no machine can be better adapted to a rough surface than the "Crooked Scythe." The following is the manufacturer's recommendation of this machine:—

"This machine has been recently very much improved, and its simplicity and efficiency seem to mark it as peculiarly fitted for a farmer's implement.

"It is not well suited for a rough surface; but it will work well on rolling land, or even side hills, if smooth. It will cut an acre and a half of grass an hour, smoothly and evenly; that is an acre in forty minutes.

"The whole Machine weighs less than 500 pounds and is easily drawn by two horses.

"Two sets of knives are usually sold with a Machine, so that when the farmer is grinding one set when dull, the Machine can be at work, not losing any valuable time while he is in the greatest hurry.

"A large number have been sold the past year, and give universal satisfaction.

#### BRANTFORD AGRICULTURAL SOCIETY.

A taste for horticultural pursuits is steadily progressing in most of the old settled portions of the Province. It would be strange, were it not so, since Agriculture is making rapid strides, and its natural ally—horticulture, cannot lag long behind. The county of Brant, can claim many enterprising and successful farmers. A County Agricultural Society, has been recently organized there, and the town of Brantford is now among the foremost in the rate of advancement. We take the following from the *Courier*, and heartily wish the new Society every success.—

#### HORTICULTURE.

The formation of a Horticultural Society in this Town, and the approach of the period for the Annual Exhibition, naturally leads us to make a few remarks upon this interesting, innocent, and at the same time ennobling and refining science. We congratulate the town and this vicinity, upon the ready mind exhibited, and the views entertained, which led at once, upon the arrival of a fit time, to promptness of action, and to the establishment of the Society in question. This step was not taken at the instance of excitement, or through the promptings of vain emulation in reference to the existence of the Society itself; but was the result of a refined taste and the desire to encourage and cultivate extensively this branch of science so admirably calculated to raise the mind of man "from nature up to nature's God." In no part of the physical world are the evidences of the handiwork of the Parent of all good more strikingly portrayed than in the hues and tints, and delicious odors, as well as in the organic structure of the beautiful inhabitants of the gay parterre. Depraved, indeed, must be that mind and insensible that heart which cannot be delighted and interested in the productions of the cultivated garden. An extract from a late number of *Blackwood*, places this subject in a just light. "Perfect wisdom," it remarks, "placed the perfect man in a garden, to dress and keep it. The place and the duty must have been divinely congenial with the exercises of an unclouded reason an undepraved heart. The love of man's primeval calling seems yet to linger fondly in the bosom of the exiled race. The first pleasure of children is to gather fresh flowers from the daisied mead, or to ply their little hands in the allotted patch of garden ground. "Heaven lies about us in our infancy"—some faint visionary gleam from Eden seems yet to rest on the infant soul, and with the



dawn of reason, the first voice of childhood seems to say, that Paradise should have been its home, and Horticulture its proper vocation." With the success of Horticulture in its ornamental branches, advances true refinement and correct taste; fully do we agree with the inimitable Cowper :

" But elegance, chief grace the garden shows,  
And most attractive, is the fair result  
Of thought, the creature of a polished mind."

Horticulture, however, does not confine itself to the ornamental, it includes the useful and substantial; wholesome vegetables and delicious fruits are also the objects of its solicitude and care. Hence, the science is valuable, as being closely allied to Agriculture. Indeed, it is difficult to determine where the line exactly should be laid between Horticulture, and Agriculture, the garden and farm. Both require an intimate acquaintance with the vegetable kingdom in reference to the wants, habits and capabilities of various plants. Therefore the soil—the common parent of the productions of both the field and garden—should be chemically considered and understood. The cultivation of the soil, the adaptation of manures, stimulants, and composts to different lands, for the introduction of different plants, is a subject of immense moment, and if properly attended to, is of untold benefit to the community at large. A mere *hortus siccus* is not what Horticulture purposes; but a well arranged, verdant, and fertile spot, yielding abundantly the wished-for crop, the successful operations of Horticulture can be conveyed to, and carried on in—in a modified manner—the furrowed field. Horticulture gives us in their perfection, a large and well arranged variety of useful vegetables, and uses the pruning hook, the scion and the bud, to impart luscious and delicate flavors to ordinary and natural fruits. It is pleasing to know that there is a deep interest taken in this community, in respect to the Society now in existence, and now as the period of the first exhibition of the season, which will take place on the 29th of June next, we trust that the lovers of this science will come nobly forward, and append their names as members, and pay their subscriptions (which is only five shillings Cy.) By so doing, the Society will be enabled to award suitable prizes, which will have the effect of greatly increasing competition, and giving due encouragement to the enterprising and successful.

#### ON THE CULTIVATION OF THE CABBAGE.

To the Editor of the Canadian Agriculturist.

SIR,—Amongst the various vegetables raised for food for cattle, there are few that can be more easily raised, or that will produce a larger amount of food to the acre, than the cabbage; and it is really surprising that so little attention has been paid to this vegetable as an article of field culture, as it comes in for use so conveniently in the fall, when grass has become scarce, and before turnips, carrots, or mangold wortzel have attained their full growth, or are ready for use. I believe one reason why the cabbage has not been more generally cultivated is, that al-

most all who have grown any, have transplanted them,—first raising the plants in a bed in the garden, and then transplanting them into the field. Now though this method may answer very well for small patches, and with careful management, it is neither the easiest, nor in my opinion the best way of growing them. The way I have grown them for several years past is the following:—As I always sow the cabbage in the same field in which I sow my turnips, and plant potatoes, the land receives the same previous treatment for all; ploughed once in the fall, and once (or twice if necessary) in the spring, with sufficient harrowings to reduce the land to a proper tilth. The land is then drilled up, and well dunged in the drill, as few crops bear heavier manuring than the cabbage; then, after covering in the dung in the drills, I sow the seed on the top of the drill in spaces as far apart as the plants are intended to stand, and after sowing roll the drills well down.

I prefer sowing them *in hills* on the top of the drill rather than to sow them all along the drill, as it is well known that when plants come up thick at first, they grow much faster than when they come up thin, and thus get sooner out of danger from the fly; it would be a great waste of seed to sow the whole drill as thick as as would be necessary to give the young plants a fair start. A slight dressing of plaster just after the plants come up, is of great benefit to the young plants.

There will always be a few hills that will not grow, but there is always sufficient plants for all deficiencies and to spare at the time they want hoeing.

In their after cultivation I pursue the same method as I do with potatoes and other root crops,—that is, horse hoe them well between the drills, and hand hoe between the young plants on the drill, then when the plants get to be pretty large set them upon the drills with the plough.

Although the cabbage thrives best on clays, or moist clog loams, yet with proper manuring they will thrive on almost any soil, and as they are both fast growing, and broad leaved, they soon cover the whole ground, thus effectually smothering any weeds that may come up often they are hoed.

As I generally grow the large drum-head variety of the cabbage, I make the drills about three feet apart, and allow the plants to stand from two to three feet apart in the drills, but with the smaller varieties of course the drills would not require to be so wide, nor the plants so far apart, and then there would be a greater number of plants on the acre. There is some danger of sowing them too early, as when sown very early, if they get a good start, they are

apt to crack and burst open the heads in the fall, and then they soon rot. About the middle of May I consider the best time, though I have sown as late as the beginning of June, and had a fair crop. As cabbages are bulky and would be troublesome to keep in large quantities through winter, I would not recommend any more to be grown than is required for feed before the middle of December, and some for family use through winter. They will be found excellent feed for milk cows in the fall, when the pastures are becoming bare, as all cows eat them with avidity and they impart no bad taste to either butter or milk; and I know of scarcely any kind of food that cows will give larger quantities of milk with than they do with cabbage. When grown on the above method there is less trouble attending them, and they are a larger and surer crop than when they have been transplanted. The weather, too, is often so dry that one cannot get them planted out in proper season; and even under the most favorable circumstances, it keeps the young plant a week or ten days back to transplant them.

I have often heard it asserted, that cabbages would not head well unless transplanted, but I think they actually head better when they are not transplanted; for among an equal number of transplanted and untransplanted plants I have always found the largest number of good sound heads, among the untransplanted ones.

It is likewise asserted, that cabbages are a very severe crop on land. For my part I have never observed the following crops any worse after them, than on the rest of the field, so that this objection need not hinder their more general cultivation.

Such of our farmers as live near to the towns and villages might grow them profitably for sale, but I speak of them here only as feed for cattle, in the ordinary course of farming.

A TENANT FARMER.

April 9th, 1853.

We append to our correspondent's article the following remarks on the Cabbage, from a recent number of that excellent periodical, *The North British Agriculturist*. The subject is one of no mean practical importance to Canadian Farmers:—

"The value of cabbage as a forage plant has never been fully appreciated by agriculturists. It is known to contain a large percentage of muscle-producing elements, and is therefore well adapted for young and growing stock. As an article of food for ewes, lambing in February and March, there are few plants better adapted. One of the chief difficulties in raising a large crop is the obtaining of proper seed. This dif-

culty, we believe, meets every extensive cultivator of the cabbage. The weight per acre which can be grown with some varieties, such as the Drumhead, or the Cow Cabbage, is very large; certainly double that of an ordinary crop of turnips. Last season, we saw at Cuning Park, near Ayr, and at Myremill, very large cabbages cultivated in the field. They would in all probability reach, by the end of the season, a weight something like 50 tons the imp. acre. The land, however, requires to be made rich; the plants placed wide apart, and the land frequently stirred during the summer. To those wishing to try the cultivation of this plant, for the first time for feeding stock, we request their attention to a paper read before the Royal Agricultural society of England, with the discussion which followed. The importance of saving seed from selected plants appears to have been universally admitted, and is the practice of all those who cultivate Cabbage upon an extensive scale.

"At the same meeting, a discussion followed on the cultivation of rape. We are more doubtful of the value of this plant for ordinary cultivation. Fields which we have seen growing did not impress us favorably with its adaptation for our agriculture. The suggestion made at the English Society was, however, rather to cultivate it for its oil, for which purpose it is extensively raised in some places on the Continent."

MR. RUTTAN'S SYSTEM OF VENTILATING.

DENISON TERRACE, April 26, 1852.

To the Editor of the *Agriculturist*:

DEAR SIR,—It is with pleasure I accede to your request by giving an account, such as I have at this hurried time been able to write, of the successful working of Mr. Ruttan's system of heating and ventilating my new house, which has now been in operation for the last three months under my own eye.

Before I go further, it is well to say, in these uncharitable times, that I am not writing a puff for Mr. Ruttan's benefit thoughtlessly at the expense of the public, on the contrary, I am writing at your request, and desiring to benefit the out-siders, for I am quite sure, the saving of wood alone, to say nothing of the pleasure and benefit of ventilation, would soon pay all the extra expense. So little is thought of ventilation by many, that they may say, Why not use any of the many kinds of furnaces already in use throughout the country, and save just as much in the way of wood?

I will endeavor to prove the necessity of ventilation to life by giving you the words of the Rev. John L. Blake, D.D., who says:



"It is to be observed, therefore, that the atmospheric air consists principally of two invisible fluids or gases, called oxygen and nitrogen. With them is combined a very small portion of hydrogen and carbon. Every animal has lungs of air vessels. These vessels in brutes are called lights, and in slaughtered animals are familiarly known to all. They resemble in structure a common sponge; the interstices of the former are designed to receive the air we breathe.— They are located in contiguity with the heart on as to bring the air received by them in contact with the blood as it passes through the heart. As we open the mouth the air rushes into it, and thence into the lungs, filling all these interstices, so that they become swollen or expanded, like a bladder or an air tight bag when we force the air into it. By a mechanical muscular action of the chest upon the lungs, as soon as the air has accomplished the object of its mission there, speedily to be explained, they are compressed so as to force from them the air before received, now become foul; and as soon as it is thus ejected, before the mouth closes, another current of fresh air rushes into it as before. Thus at every opening of the mouth one current of polluted air is forced out of from the lungs, and another current of atmospheric or pure air through the same channel, rushes into them.

"The air we breathe, or which we thus receive into the lungs, is worked off by a process similar to combustion. The lungs might not hence be improperly called a furnace to decompose the air, the same as a stove is a furnace to burn up or decompose the wood or coal placed in it for combustion and the generation of heat.

"Accordingly, the oxygen of the air, being separated from the nitrogen, when in the lungs, is employed to clarify the blood of its impurities, which are constantly accumulating, not unlike the clarifying of coffee or any liquid by the application of a gelatine substance. The blood, before being thus clarified is of a dark brown or blackish colour, and thick or clotted. This dark colour and coagulated consistence is occasioned by the carbon and other impure substances with which it had become impregnated in passing through the system. But when the blood is clarified or renovated by the action upon it of the oxygen in the lungs, it is of a bright red colour, and then passes through the arteries to every part of the animal frame, yet in its passage is constantly gathering up impurities, with which it was previously loaded. On reaching the extremity of the system, it passes into another set of vessels called veins, to answer the purpose of a backward track of a railroad, and thus it returns again to the head, dark and clotted as before, thus again to be purified by its contact with the fresh oxygen of the lungs.

These processes of inhaling fresh or oxygenated air, or breathing; then of purifying the blood; and then of collecting the carbon and other poisonous substances of the animal system, are continued to the end of life; that is, if they are discontinued, the lamp of life would go out, as flame will be extinguished when the gas or oil which fed it is exhausted.

Thus to purify the blood, the oxygen is all extracted from the air conveyed to the lungs by breathing, and is literally burnt up; as much so as the fuel placed in a stove; and will no more answer for the purpose a second time, than the ashes from the fuel already consumed in combustion would answer to make a new fire; or than the skins of grapes, after the juice had been extracted, would answer to make wine; or than excrements of animals would again answer for food, after all the nutritious elements had been removed in its first use. Indeed we can no more use the air in breathing a second time, than we can use our food the second time.

"The former in use becomes as foul as the latter; not only as foul, but as inefficient for its legitimate agency. Hence no one can fail to perceive the necessity for a constant supply of pure air in breathing and consequently in the preservation of life. To attempt living without it would be as absurd as to attempt living without food. Moreover, we could live an hundred times as long without the latter as we can without the former; and to mix arsenic with our food would be comparatively no more fatal to the vital principle, than to mix a poisonous gas with the air we breathe.

"It is a well known fact that we breathe eighteen or twenty times every minute; and at each breath we inhale or take into the lungs about one pint of air, or over two gallons each minute. Thus in an hour an adult person consumes more than one hundred and twenty gallons, so that if he were enclosed in a hogshead containing one hundred and twenty gallons, before the end of an hour the whole of the air contained in it would be exhausted, and he would die for the want of the vital principle which pure air imparts in breathing.

"It is well ascertained, that animal life depends on having a constant supply of atmospheric air, as it is that there must be a supply of food; and where this supply is deficient breathing will become difficult. It will be difficult also if the air is impure. The cases on record are numerous where persons have suddenly fainted and died from entering deep wells, caverns, and vaults filled with noxious vapors. So they are of no rare occurrence where persons have died when sleeping in close rooms containing charcoal. The vapors thus inhaled are in reality the same as those ejected from the lungs in breathing. In the one case the carbonic acid gas is generated in the little inn or pipe clay furnace; in another case, it is generated in the lung, already said to be analogous to any other furnace. This is the only difference.

"Hence if a prisoner were shut up in a cell perfectly airtight, containing the cubic measure of twelve such hogsheads, or if any one were to attempt sleeping in a room airtight of that capacity in about ten or twelve hours the air would be so foul from use in passing through the lungs, that if life did not become extinct, breathing would be barely practicable. Or if four persons were to sleep in an air tight room of the capacity of forty five or fifty such hogsheads, in about ten or twelve hours they would all become incapable of breath-

ing. Or if the cabin of a steamboat, of the capacity of a thousand or twelve hundred of these hogheads and containing one hundred passengers were without ventilation, and were to receive no fresh air a similar effect would be produced on them all—on this account it is evident, that all rooms for sleeping and all public rooms churches, lecture rooms and halls for amusement containing a great number of persons, should be so situated and so constructed that there may be a continuous escape of foul air as of ingress of that which is pure.

I think after reading the above you will admit the necessity of pure air to sustain life, and I think Mr. Ruttan's plan is thorough and complete for procuring a sufficient supply for your house, the very life sustaining thing you many of you so carefully exclude from your dwellings.

Mr. R. has given to my house six square feet of outside air taken about 5 feet from the surface of the ground on the north side over which air duct I have full control letting in just as much as I require according to the weather warming the house in winter by passing through the furnace, and cooling it in summer.

Nearly all my friends that have seen the working of it say it is the best they have yet seen, beside it is so clean a way for warming a house, no wood to carry into nor ashes out excepting to the furnace which is in the cellar, and I have been enabled ever since it has been in operation to keep my house warmed to six or eight degrees above temperate with the one fire, although I provided the house with grates having little hopes that Mr. Ruttan could warm all my house (which is not a small one for a farm house) with the one fire.

Pray excuse haste and believe me to  
remain yours truly

R. L. DENNISON.

P. S.—I should be most happy to show the working of the plan as produced in my house to any civil or respectable person.

R. L. D.

#### THE AGRICULTURE OF ANCIENT EGYPT.

The fertility of Egypt, it is well known, mainly depended upon the annual overflowing of the Nile. Egypt consists of a narrow valley, and the waters brought down from the higher countries are impregnated with highly fertilizing substances, which are left on the surface as a thick top-dressing. The husbandry of Egypt was exceedingly simple. It is thus described by one of the most celebrated ancient writers:—

"How easy," says Pliny, "is the Husbandry of Egypt. For there the river Nile, serving the

turn of a good ploughman, begins to swell and overflow at the first new moon after the summer solstice. He begins fair and gently, and so increases gradually: as long as the sun is in the sign Leo, he rises on to his full height: on entering into the sign Virgo, his fury slackens and he slowly decreases, until he resumes his wonted channel. It is always observed that if he rise not above twelve cubits high, the people are sure to have that year a scarcity; and they make their account for the same if he exceed the gauge of sixteen cubits; for the higher he rises, the longer he is before he is fallen again to his level. By which time the seed-time is past, and men cannot sow the ground in due season. It is generally understood to be [their practice, that upon the subsidence of the deluge, they cast the seed upon the floated lands, and immediately after turn in their swine to trample it into the soil while moist. This, at any rate is certain, that as soon as the river is down, which mostly happens about the beginning of November, they sow their seed upon the slime and mud; which done, they go over it with the plough, turning it in with a light furrow. Some few then begin weeding the ground; but most of them, after sowing is finished, never step into the field again to see how it comes on, till they go in with the sickle at the end of March to reap it. By May-time the Harvest-home is sung, and all done for the year. In Lower Egypt the straw is never a cubit long; the reason being that the seed lies very dry, having no other nourishment or manure than the mud of the river; and there is nothing underneath but sand and gravel: but in Upper Egypt, about Thebes, they are far better farmers, and have better harvests, that part being, as indeed most of Egypt is, low and flat. \* \* \* \* The same Husbandry," he goes on to say, "is practised in Babylonia and Selucia, where the Euphrates and Tigris overflow their banks in like manner, but to better effect and greater profit, owing to the more general use of sluices and flood-gates. And in Syria they have small light ploughs, on purpose for making their shallow furrows and stitches; whereas, *with us in Italy*, in most places, eight oxen at least are required for one plough; and, indeed, to make any speed with it, they must work till they blow and pant again."

#### THE MOLE A SUB-CULTIVATOR.

Even your tiny mole is a ruthless beast of the field, to slugs, and snails, and caterpillars, and such land-sucking fry, a fierce sub-navigator in his way; but his track turns up some pretty cultivation; it only wants spreading, far and wide. It is not so wise to throttle him as you think. I grieve to see him hanging gibbeted, his clever paddles stopped by cruel ignorance. For he is your only granulation-master; he taught us drainage and sub-cultivation, and we shall learn of him another and a greater lesson, some day, and call him a prophet, when we've done hanging him and have got some speculation in our own eyes, whose sense is shut at present, instead of saying he can't see.—*Tulpa: or the Chronicles of a Clay Farm.*



## AGRICULTURAL EDUCATION.

TOWNSHIP OF HAMILTON FARMERS' CLUB.

*To the Editor of the Canadian Agriculturist:*

SIR,—I enclose you a report of the proceedings of the Township of Hamilton Farmers' Club (prepared for the *Cobourg Star*) on the important subject of Agricultural Education. Though I would be very glad to see a school or institution established, connected with an Experimental farm, (a model farm would be of very little use,) for the education of farmers, as such an institution, however, could only be available to our wealthier farmers,—and as the great body of farmers must always depend on our common schools, I think every endeavor ought to be made to engraft agriculture permanently into them, and make it part and parcel of our excellent common school system. Let the first principles of practical Agriculture and Agricultural chemistry be taught therein. The great point is to get started, to prepare competent teachers, and provide proper Books and apparatus, and to demonstrate experimentally the practicability of the thing. I hope the day will soon arrive when every school will have the necessary apparatus, and every teacher of youth will know, and be able to teach, something of the important sciences of Agriculture and chemistry.

WALTER RIDDELL,

*Secretary.*

Cobourg April 9, 1853.

At a meeting of the Township of Hamilton Farmer's Club, held at McIntosh's Inn, Cold Springs, on Saturday, March 26th, 1853. In the absence of both the President and Vice President, Mr. David Sidey was called to the Chair.

PRESENT.—MESSRS. A. J. Burnham, Masson, Sidey, Forsyth, Newton, Steel, Roddick, W. Eagleson, M. Eagleson, Watt, Weir, Sleep, Bourn, Ainslie, Black, Johnston, Ball, McIntosh, Richards, Campbell, Richardson, Sutherland, Griggs, Wade, and a number of others.

The minutes of last meeting were read, and Mr. J. Wade read the following Essay on Agricultural education.

At no age of the world has the subject of education engrossed the attention of the community more than the present. All classes of men from the Prince to the Peasant, are alive to the grand principle that the instruction and training of the rising generation, is the most valued legacy that the present race can confer upon the future. Still, while all agree on the necessity of education, much difference of opinion prevails in the way of its accomplishment.

I have no intention of meddling with that part of the controversy, of how the matter is to be put in practice; whether by endowments in the shape of public grants; free schools supported by taxation on property, or on the voluntary princi-

ple, that is, the Teacher depending on his qualifications to obtain the support of such Parents as choose to employ him.

My intention at present is simply to speak of the different descriptions of education, the varied classes of society require. The school education of the present day, is almost wholly mental or intellectual, and while it may be very well adapted to some classes of society, something more is required for others. For instance, while the professional man and the merchant require little more than a continuation of the intellectual training pursued at school to fit them to play their part, the farmer and mechanic must have their physical or muscular power trained in addition to the mental, and this physical education is not simply confined to the operations of manual skill, but extends to the training of the muscular powers to sustain the necessary amount of endurance required of them.

We observe in the perfect and beautiful arrangement of our great Creator, the adaption of mankind to fill the varied operations allotted to each to perform; and are often struck with wonder, when we see what an active mind can accomplish, when properly trained and directed; and also what is accomplished by the physical powers in the various mechanical and agricultural processes, and this ought most certainly to stimulate and encourage us to perform the part allotted to us, under the system a wise Providence has ordained.

A prejudice existed, and does still in a measure exist in the minds of the old school of farmers, that a high order of education was not necessary for a farmer of his class; that to be able to read, write, and keep his accounts was all that the farmer required to learn at school; and this feeling has been encouraged by the fact, that the great bulk of our successful agriculturists, so far as property making is concerned, are of that stamp, and if nothing more was required of him than to add farm to farm, and accumulate wealth in any other way this would be well enough.

But before a want is sought to be supplied, that want must be felt; and before any desire will be attained, it must have presented itself in an attitude sufficiently imperative to demand its accomplishment; and the principal cause of the desire of education amongst the farmers and mechanics has arisen from seeing themselves superceded in the race of life by the educated class, and having to submit even the representation of their own peculiar interests to men, not before themselves either in circumstances or in intellect, but simply from being possessed of that mental training imperatively necessary at this age of the world, to command even the chance of being attended to; and, although, it may be mortifying to acknowledge such a state of things to be the case; yet it is quite necessary to feel it before anything will be done to remedy the evil, and nothing but the feeling of being obliged to submit the representation of the peculiar interests of the agricultural classes, to men of other classes, will surmount the prejudices of the old school farmer against a high education, and pave the way to some system adapted to his peculiar wants.

But as the old adage says, 'while the grass is growing the horse is starving.' What are we to do in the mean time? Although the agricultural community are waking up to the necessity of some specific system of education being required for this class, it as yet has only been talked about; and many of us have sons, whom we are not only sufficiently able, but also most extremely anxious to furnish all in our power, to obtain the education required to enable them to fill their proper places in society, with credit to themselves and advantage to the interests of their class; but from the want of any proper institution for the peculiar wants of the farmer, there is great difficulty in combining such school education as can be obtained, with the habits of labor required to make a thorough practical farmer. The want of some peculiar system of education for farmers' sons is daily gaining ground from the sheer inefficiency of all our present educational institutions, to furnish that particular training which they require. Our present Colleges being imitations of the old institutions founded in England centuries ago, (and we are well aware that they have always followed rather than lead in the progress of civilization) makes them of course very unfit patterns for us;—they may do for young men intended for the learned professions; but even then, a great deal of time is taken up in learning things which can be of no practical use even to them; and to keep a boy attending to them till he is 21 years of age, most commonly unfits him for any of the practical duties of making a living for himself.—My opinion is, that a Farmers' College should unite with the useful parts of intellectual instruction, a proportion of the common physical operations of the Farm, part of the time occupied in school, the remainder in the field and garden, or workshop, and one-half of the time commonly spent in the athletic sports considered necessary for health, in our old Colleges, if spent in learning the manual operations of the farmer or mechanic, would be sufficient to make a practical workman; besides, boys would even from choice try their powers against each other at work as at play, if it was properly ordered, as it is simply the competition or rivalry which gives zest to the game: a game of hoeing, ploughing, mowing, or cradling, would be equally gratifying as cricket bowls, or marbles, if it was not extended to be wearisome enough to consider it work. But this is not what I want to come at. As all men must either work or starve, unless some one has done it for them already, or can be persuaded to do it now; habits and labor must be acquired; the mind and body must both be disciplined to it; and, although it may not be very palatable, it must nevertheless be submitted to; and it is an established principle in my mind, that unless habits of labor are acquired in youth, they never will be formed at all; and labor is labor, whether exerted in the mental or physical train.

But, as it is merely speculative to deal in principles and generalities, I must come to the point of submitting my own practical opinion of what an Agricultural College ought to be; and I would say this, that many of the theories submitted to the public on this subject, have fallen through from the cumbrous machinery required to make

them work; too much attention has been paid to wild speculations of what chemistry and other abstruse studies were going to perform, to the neglect of observing the more practical every day operations, and reasoning from the results of induction obtained in this way, and which in my opinion is not only the safest but the only way in which true knowledge is to be obtained. My idea of an Agricultural College would be something in this way, a farm of, say 200 acres, or land sufficient to carry out, on a respectable scale, something like the most approved system of farming extant; in connection with the necessary routine duty of useful mental instruction, the due training of the mental and physical or muscular powers being proportioned, and I am satisfied that if properly carried out, it would not only be much more complete, but also much more pleasing to the youthful mind, from the endless variety it would produce, the mind exercised part of the day, the body the remainder either in work or play, and when the intentions of our Creator are understood and properly carried out, education in all its parts, will be the most pleasing part of the duty both to the parent and child, which we are called to perform.

Mr. SUTHERLAND said, from the lucid and pertinent manner in which Mr. Wade has brought the subject of an Agricultural education for the rising generation before our notice in his able essay, with the sentiments of which I cordially concur, I have but little to add in the matter except it may be in the way of illustration.

We are often astonished at the successful results of experiments made by individuals in the various branches of husbandry, and which the many excellent agricultural periodicals of this and the mother country give us an opportunity of noticing. In reflecting on those experiments we are very apt to overlook their origin and attribute them to the deep read agricultural knowledge, whereas in most cases they are merely the solving of a theoretical problem, of which the experimenter knew nothing but what emanated from his own fertile brain, previous to its successful result. It is therefore of paramount importance that for the rising generation these experiments should be more concentrated in the hands of some corporate body. In the shape of agricultural seminaries combined with model or experimental farms, an unsuccessful experiment in this case would not be attended with the same individual loss. The physical and mental faculties of each would have an opportunity of being developed and both made more vigorous by judicious variation, and the youth thus taught to labor and study would be equally industrious, and as a matter of course more enterprising in his calling, than his less fortunate predecessor. In an inland country like this we have not the same access to guano and other manures not the immediate produce of the farm; but, I am satisfied that an agricultural education based on sound principles, will enable us to make what is within the reach of every farmer, viz., our stable and barn-yard manure much more productive than at present, for want of tanks and from various causes you are all well aware that our liquid manure, which every enlightened farmer knows is the most valuable



fertiliser is now in a manner lost. I am glad that the subject of an agricultural education has been brought up as I have a young family of boys who I hope will be able through force of education to extract those riches out of the soil, for want of which, and no doubt a lack of proper enterprise along with it, I never expect to reap that benefit from this noble occupation, which a judicious training would have produced. I would now beg leave to apologize for taking up so much time to the detriment of better speakers, but as Mr. Wade requests me to state my views in regard to the general schoolastic education for a young farmer, apart from the professional part, I would merely state that I think he ought to have a good knowledge of figures so as to be able to calculate on any emergency how the transaction of a bargain and sale stands, and not to fancy he has received 4s 6d for his wheat, when he has only received 4s 3d—in fact he ought to be a competent book keeper—he ought to have read enough to have imbibed a love for literature; as for the classics, I would leave them to the professional scholar, as I think we have quite enough translations in our mother tongue of the most useful and amusing of ancient and modern authors.

Mr. WM. EAGLESON said, that as he had got but very little Education himself, he had very little to say on the subject, only that as we farmers for want of education had to borrow our Legislators, and even our Township Councillors, from other classes of society, we feel the want of education every day.

Mr. WM. BALL said, all he would say was that he wished to see a more enterprising spirit among farmers, our meetings better attended and our crops grown more by chemical aid.

Mr. G. BLACK said, that he thought a good education was highly useful for farmers, both for the purpose of keeping accounts and for making experiments on the farm. He thought a model farm would be highly useful.

Mr. A. MACINTOSH said, I am rather out of my turn in speaking, and really could say but little on the subject. As you are all aware I was not bred to farming, in the early part of my life it was my business to clothe the naked, and latterly it has been my principal employment to feed the hungry and give drink to the thirsty. I coincide with Mr. Wade in the views he has taken on the subject, it is one of vast importance, as the young farmer is the bone and sinew of this country, and I think a model farm would be highly useful. I do not wonder at Mr. Wade saying that he was always willing to learn even from men that used the pick or the shovel, as Sir W. Scott once gave half-a-crown to a workman to learn the word *whommel*.

Mr. SAMUEL CAMPBELL said, if my friend Mr. MacIntosh's business is to clothe the naked, mine is to build houses for them, as I was bred a mason and not a farmer.

Education is a subject I have much at heart, seeing I got so little of it myself; without a man can read and write he is very little above the oxen we drive; no doubt there are some bright men without education, but what would they have been with it? I would almost lay down my life

to have my family well educated, and go great lengths to have every one educated whether he be rich or poor.

When I went to school I got as lazy as he hang-ed, and I believe it was the same with other boys as it was with me. I think if we had a model farm and school combined, where the boys could both get physical and mental education at the same time, it would be much better for boys than sending them to school one season and take them to the farm the next. It is true they might learn farming with their fathers, but then when they moved off and got farms of their own, the soil might be so different that they might have to serve as it were another apprenticeship.

A model farm at Toronto would be very little use to us. There ought to be one in every county. Besides we should have some better mode of educating our daughters. My friend on the left calls me to order for wandering from the subject. But, sir, our daughters should be educated in their business as well as our sons. A good wife is as profitable for a young farmer as a farm, I think it was Allan Ramsay that said:

I heard my Grand-father say, and that I'll not forget,  
A man could not get a snug bien-house unless his wife wad let.

Mr. J. RODDICK said; we hear a great deal about model schools for farmers, and possibly they might be beneficial for the rising generation, but for ourselves, he thought that if our farmers met oftener together as they do to-day, and learn each other's practice and experiments, it would be as useful to us as a model farm.

Mr. GRIGGS said, as he was a very poor scholar, and had been brought up in very poor circumstances, he could say but little on the subject in hand; he had always tried all he could to learn farming, as it was a business he always delighted in. When he first came to this country he had seen some farmers throwing their dung into the river to get rid of it; he thought to himself, surely this must be a rich country where the land has no need for manure; but he believed they had all learned the value of manure now. He had laboured under great disadvantages for want of education, and he was trying to give his children as good an education as he possibly could.

Mr. WM. RICHARDSON said, he was sure they were all delighted with Mr. Wade's remarks, and he was happy to hear the subject so well brought out, yet he hardly agreed with some of the remarks he had heard. No doubt that if a man was always using one set or class of tools he would become more expert at their use than if he had to use a number of different kinds; he thought it was otherwise with the mind, and that it might profitably be employed on a number of different studies at the same time. We felt all a want of education; our common schools do very well for children till they are ten or twelve years old, and then we hardly know what to do with them. At home they had their military and naval schools and academies; now he thought we ought to have something of the kind among farmers, so that our children could both be taught the various branches of a liberal education, and learn farming at the same time. He thought that the farmers of this Township might try something of the kind; if they could find some one properly

qualified it might induce them to try it; he thought our farmers would encourage it by sending their sons to it. An excellent way to acquire knowledge was, never to be ashamed of our ignorance.

Mr. FORSYTH said he approved generally of Mr. Wade's Essay. He wished to see all children educated—education was as beneficial to farmers as any other class of the community.

Mr. Masson said he had enjoyed the pleasure of farming for a good many years, and his greatest want had been the want of education. His father gave him a good education in farming; that is, he had learned him to work well—made him a good workman. The way he had brought up his sons was this, his eldest boy he had sent a part of the time to school, and part of the time he had kept him at home at work on the farm, where he taught him the lessons he had learned from his father, and the lessons he had learned of his own experience; now he found that his son was both a competent scholar, so far as reading, writing, and arithmetic went, and likewise a good workman—could handle the plough, flail, or any other implement on the farm. His other son he had sent constantly to school till he was fifteen years old, and now he thought he might make a pedlar or anything else of him, for he believed he never would make a farmer. He thought the best way was to send them early to school and early to work, and not to keep them constantly at one thing.

Mr. A. J. BURNHAM said, he approved of giving children a good education. He thought it would be better to bring them up both to work and to school, and always to one.

Mr. J. BALL said he took a deep interest in the subject, as it was education that formed the common mind, for without education a man was worth very little. He thought we ought to have some institution expressly for educating farmers' sons.

It was moved by Mr. MACINTOSH, seconded by Mr. BLACK, and carried unanimously,—That the thanks of this meeting be given to Mr. Wade for his excellent Essay.

The next meeting of the Farmers' Club will be held at Ball's (late Macintosh's) Inn, Cold Springs, on Thursday the 5th May, 1853, at one o'clock, when Mr. Richardson will read another Essay on Agricultural Education.

#### COUNTY OF WELLINGTON FARMERS' CLUB.

The second meeting of the Farmers' Club was held on Friday, March 16th, in the Town of Guelph—the President, Col. Saunders, in the chair. The Secretary presented the Report of the Committee appointed to draft a Constitution for the Association. The *ordinary* meetings will be held on the second Friday of each month, excepting May, July, August and September; and the President is authorized to call *special* meetings. While the meetings will be open to the public generally, only members of the County or Township Societies who shall have entered their names with the Secretary, and paid a York shilling per annum for defraying incidental expenses, shall be considered members of the Association, or entitled to take part in the proceedings. The

question for discussion was, "UNDER WHAT CIRCUMSTANCES AND TO WHAT EXTENT IS IT PROFITABLE FOR THE FARMERS IN THIS COUNTY TO RAISE FALL WHEAT?"

Mr. HENRY TOLTON, in opening the question, said:—The subject for the evening is certainly a very important one, and I should have been exceedingly happy if it had fallen into other hands; for it is well known to most of you that I have neither knowledge nor experience of the subject; and with the nature of the soil in the County of Wellington, at least in a great proportion of it, I am wholly unacquainted.

On the subject before us, then a very important question is presented at the outset: Have we a soil adapted to the raising of Fall Wheat? If we have not, it must be obvious to every intelligent practical agriculturist, that, under no circumstances, would it be profitable for the farmer to raise Fall Wheat. But I have no desire, Mr. President, to present a darker view of the subject than is actually necessary; for I believe we are no less favoured in this county for a fall wheat soil than they are in many other counties of Canada West, for it is well known that a great portion of the land in the south-western parts of this county is admirably adapted to the raising of that particular crop, and in those townships where the soil is more varied, the intelligent, observing farmer, will find out those portions of it that are adapted to the cultivation of fall wheat. In our present circumstances, a naked fallow seems almost unavoidable; for the farmer must use some means to clean his land, and labor in this country being so very high—to say nothing of the limited supply and the difficulty of obtaining it—he is prevented from cleaning and preparing his land for green crops on a very large scale. On those naked fallows that have a warm porous subsoil, with good natural or artificial drainage that will allow the water to escape from the root of the wheat plant as soon as the frost is out of the ground in the spring, the plant will present a healthy appearance, commence an early growth, and have time to come to an early maturity, instead of being cut short in the midst of its career by rust or mildew, which the late wheat is so subject to. On our soils, then, Fall Wheat may be cultivated to a considerable extent with advantage, provided the farmer can obtain a remunerating price for it when ready for the market; and those warm lands that are in a good state of cultivation and well prepared for the pea crop in the spring, may, after the peas are harvested, be profitably sown with Fall Wheat; although the crop will not be so heavy as on the fallow lands, yet the wheat will generally be of a good quality; but whether fallow or pea ground, the land should be in such a state of cultivation as to ensure a good crop, unless under circumstances over which the farmer can exercise no control. If the farmers generally were to cultivate their land with more skill, and exercise more judgment in sowing Fall Wheat only on those lands that are adapted to raising that description of crop, they would seldom have to lament the loss of the produce.

But on those cold, springy lands with an impervious subsoil, and which have neither natural



nor artificial drainage, the advantages of raising Fall Wheat to any extent will be inconsiderable, and will very likely, from our generally unfavourable springs, result in disappointment. The late spring frosts to which we are subject in this latitude, cause the wheat plant to lay in a dormant state for a length of time when it should be progressing, or, as we have too frequently seen, to go backwards. Indeed, on a rich soil that has been worked fine for seed in the Fall, I have seen it under these circumstances, run together in the following spring. Then the few wheat plants that are able to survive the spring frost must lose many days of warm spring weather, for the heat of the sun must evaporate the superfluous water that is lodged in the soil before the wheat plant can thrive. The plant is then occupied gathering and spreading until the season is far advanced, and then the rich, luxuriant straw that this rich, moist land throws up, is almost sure to rust, when the result, on these moist soils, will be a crop of from ten to fifteen bushels of inferior wheat per acre. On such soils, then, the advantages to be derived from growing Fall Wheat are anything but great, while, on the other hand, such lands are well adapted to the raising of Spring crops; and when we compare the present and the few past years' prices of Fall Wheat with the prices of the coarser grains, and the great difference in the product on such soils, (for where ten and fifteen bushels of inferior wheat per acre are grown, thirty bushels of peas, and to speak within bounds, sixty bushels of oats of good quality, per acre, may be grown at less expense;) when we compare the value of fifteen bushels of wheat at 3s. 9d. per bushel, which is rather a high average, with the value of thirty bushels of peas at 2s. 6d. per bushel, the result will be in favor of the peas. It is true that the peas are an expensive crop to harvest, but the advantages of green crop, and the value of the fodder, if well secured, will compensate for the extra labor.—Then if we compare the sixty bushels of oats, at 1s. per bushel, with the fifteen bushels of wheat, the result will be in favor of the oats, to say nothing of the difference in cultivation, the value of fodder, and the expense of harvesting.

Mr. WRIGHT was of opinion that to grow Fall wheat to advantage, they must necessarily have first a good subsoil, or they must improve an indifferent one by draining and manuring. But with all the care they could exercise in cleaning, manuring and sowing, good and bad soils were alike affected by the unfavorable winters to which this climate was subject. A fall of 18 inches of snow, followed by rain and a hard frost, was a sore trial for the young wheat plant, which, under such circumstances, very frequently either smothered or froze out. A soil sufficiently porous to throw off the superabundant water, while retaining the salts and juices, was necessary to protect the plant from such vicissitudes of climate. Again a superincumbent weight and pressure of snow and water frequently incrustated and glazed the surface of the soil in Spring, stopping the pores and preventing the fibres of the plant from procuring nourishment at the fitting season. He had tried harrowing,

under such circumstances, at the risk of destroying a considerable proportion of his crop, but without beneficial effect. Were the seed, however, planted in rows, and an efficient drilling machine used, this difficulty would be overcome. He was of opinion that the soil and climate of Western Canada were sufficiently adapted to the growth of Fall wheat under a proper system of cultivation. There was no lack of adequate material in the soil, nor any obstruction in the climate, but what might easily be overcome under proper management. He would commend sowing in rows or drills. In the system of broad cast sowing presently used, the young plant was deprived of the due action of the sun and atmosphere at the proper period to promote its growth, and a superabundant supply was imbibed at an after period, when it must prove not only less advantageous, but positively injurious. It was necessary to accommodate the feeding to the progressive strength and requirements of the plant. The dew, rain, and sunshine of July sought too rapidly to effect a process which should have been the object of an earlier and more gradual operation, causing a rupture of the vessels from under pressure and the nourishment being thus cut off, the grain became in consequence small and shrivelled. Were adequate nourishment obtained earlier, no such result would follow. He would recommend, more especially where the ground was hilly, thorough draining with small furrows, large channels being apt to carry of the seed and manure. Where the land was poor, or the superfluous water could not easily be got rid of, it were better to raise cattle than Fall wheat.

Mr. L. PARKINSON suggested the question, whether in the present state of the market, Fall wheat was the most profitable crop in this section of the country. At one period, wheat was almost the only description of produce for which cash could be procured, which was undoubtedly the cause of its being so largely cultivated. A very considerable change had taken place in this respect. Now, most agricultural products command a ready cash market. Some sections of the country were well adapted to the cultivation of grasses, and Spring grain, while others, having springy soils, were apt to be parched up in the long summer droughts, and were consequently less suited for such crops. The soil in the County of Wellington, was considerably diversified, and this was frequently the case even on the same farm. Retentive soils might in some seasons do as well as the porous land, but generally soils retaining too much moisture would bring to early maturity, would give a longer growth, a darker color, more straw, and be more liable to rust, although occasionally producing good crops. He did not agree with Mr. Wright as to the manner in which the mortar-paste and glazing on the surface of the soil acted on the crop. When the frost penetrated to a considerable depth, the water was prevented from being absorbed; then when the heat came, the gases that were engendered, in effecting their escape, swelled the soil and threw out the plants. Mr. P. described minutely this process, and appearance of the glazing. He recommended manure to prevent

crusting, and had found the decomposition of the old sward effective in preventing the soil from binding.

Mr. D. STIRTON said the mode of cultivation must be accommodated to the peculiarities of the soil. In Puslinch, the Spring grain was frequently injured from the soil being to porous. He much approved of sowing in rows, or dibbling, and regretted that no suitable drilling machine had yet been constructed or imported into this section of the Province. He would recommend the selection of good seed, with frequent change, washing and picking. In Puslinch stubble or pea land was not found so suitable for Fall wheat as a naked fallow. He deprecated the plan of putting unrotted manure on ground intended for wheat, by which means a plentiful crop of noxious weeds were generally insured. The manure should be put in with the green crop taking previously to sowing the wheat. He was persuaded that with good management they might produce thirty bushels per acre, instead of as frequently at present, fifteen.

Mr. McCREA was afraid lest the tenor of the remarks made should produce the impression that the County of Wellington was not well adapted for the production of Fall wheat. He believed the risk was not greater here than in other parts of the Province, and that a failure in the crop was oftener the result of ignorance in the mode of cultivation, than from any incapacity in the soil or unsuitableness in the climate. It would be remembered that there were here fewer farmers bred to agriculture than perhaps in any other County in the Province. The majority of the original settlers had been brought up in other professions. It was his decided impression that this County was well adapted to the cultivation of Fall wheat—that indeed they could grow no crop more profitably. Different countries were suitable for the production of different articles. Rice and Tobacco were the staples of the Southern States of America, as wheat must ever be that of Canada. Moreover, however fashion or fortuitous circumstances might operate on other kinds of produce, wheat, the staff of life, must ever maintain its position and command a market. He had kept a note of the average produce per acre, and the price he had received for his Fall wheat for the last eleven years, which he read as follows:—

	Bush.	York
1842	- - - 16	- - - 5 0
1843	- - - 20	- - - 6 6
1844	- - - 25	- - - 6 0
1845	- - - 35	- - - 7 6
1846	- - - 30	- - - 6 6
1847	- - - 30	- - - 6 0
1848	- - - 32	- - - 6 0
1849	- - - 31	- - - 6 0
1850	- - - 30	- - - 5 8
1851	- - - 30	- - - 6 8
1852	- - - 30	- - - 6 6
	11)309	11)67 2

28 1-11 at 13-11

say 28 bushels at 6s York=£5 5s per acre.

He had found lime a very great benefit in the cultivation of wheat. During the first three years he used no lime, and in that period, although only a small portion of the land and that the choicest on the farm, had been put down in Fall wheat, the average was not as high as that of the succeeding years. Were these three years taken off, the average produce of the remaining eight would be considerably higher. He generally used about eighty bushels of lime per acre, and he found that the benefit was not exhausted with the first crop, but continued to be developed for six or seven years. He found that lime aided essentially in decomposing and converting into manure the roots and fibres of plants, frequently very abundant in the soil.

Mr. PARKINSON said his brother had put somewhere about 150 bushels of lime per acre on some ground, and the result was an extremely thin crop in 1852. He believed he had outdone the thing, for small pieces of lime were still visible on the ridges of the drills.

Considerable desultory conversation in relation to the subject ensued.

On motion of Mr. Harland, seconded by Mr. McCREA, it was resolved that the following question should be discussed at the next meeting,—“What description of Neat Cattle may be most advantageously raised in this County?” and Mr. Wright was appointed to open the discussion.

Thanks having been voted to Mr. Tolton for his address, to Mr. Pirie for representing the local press, for attending and reporting the proceedings, and to the chairman, the meeting adjourned until the second Friday of April.—*The Herald*.

#### CULTIVATION OF THE POTATO.

Since the appearance of the potato blight, great uncertainty exists as to the profitability of this crop. In some districts, its cultivation has almost wholly ceased, while in others it has been greatly extended. This change in the potato-producing localities has been almost entirely owing to the prevalence or non-prevalence of the blight. The unusually high prices at present obtained for this vegetable, will direct increasing attention to its cultivation. Contrasted with the price of wheat or oats, potatoes never ranged so high—the best samples selling for 22s a boll of 4 cwt.

It is impossible to draw any comparison between the profitability of a crop of potatoes and a crop of turnips—the result being so much dependent on the extent of the taint. The proportion affected may vary from 1 up to 95 per cent. of the whole crop. Indeed, last season, in some districts, the malady was so virulent, that the potatoes were not lifted. What makes the disease the more mysterious is, that in some districts on land of nearly similar quality, one field comparatively escaped, while the adjoining ones were almost wholly destroyed. We have learned of instances where the turnip crop left a very high return, being chiefly consumed by sheep, while the potatoes were nearly a dead loss. On other farms, as many as 40 bolls of sound potatoes were obtained; this, with a price ranging from



15s to 20s, leaves a return nearly equal to that of the whole of the rest of the rotation.

**SOILS.**—The soils most suitable for the growth of the potato are those of a dry, silicious nature, or a dry, peaty soil, both requiring a proportion of a calcareous matter. Still more important is it that the field should be open and not sheltered by trees or high fences, and the climate can scarcely be too dry, particularly during the months of July, August, and September. All wet also undrained clays should be avoided, and those districts where the climate is subject to autumnal rains. The land cannot be rendered too clean, and friable, and should be comparatively rich. Either land which has been in old pasture, or which has been manured for the preceding crop, should be selected. Mr. Reid of Sanquhar, Ayrshire, finds growing after lea the most profitable. Mr. Hope, Fenton Barns, after turnips. As the probable returns of the potato crop are so large, no reluctance should be felt in selecting the most suitable fields by those determined to adopt an extended cultivation. To render the land friable, the grubber is perhaps the best implement. If the plough is used, no fresh soil should be turned up—that is, no soil which has not been stirred by the autumn ploughing. Drills may be formed from 28 to 30 inches, and should be formed rather flat on the top, not placing the seed too deep. The best plough for forming drills is the double moulded plough.—Potatoes may also be planted by the plough, the sets being placed in every third furrow; also in lazy beds, &c.,

**MANURES.**—As it is essential for a large crop that the land should be rich, manure should be applied, however fertile the soil may be from previous manuring. Too much farm-yard manure, however, is understood to increase very seriously the tendency to the taint. From 12 to 16 tons of half rotted farm-yard manure may be applied either in the drills, where drilling is adopted, or spread on the surface, previous to the ploughing, if ploughing is practised. From 4 to 6 cwt. of guano should also be applied either on the surface or in the drill previous to the plants being set. Rape dust is also a very powerful manure for the potato—5 cwt. of this may be sown over the soil previous to the formation of the drills.

**VARIETIES TO GROW.**—For several years the Regents and American Earlies almost wholly escaped the taint, while the red varieties, Cups, Perthshire Reds, Fortyfolds, &c., were very much diseased. Last season, however, the opposite was the most common, the Reds comparatively escaping, while the Regents were very much diseased. The Regents bring always the highest price, about one fourth or fifth more than the common red varieties; but the diminished produce, compared with some of the red varieties, more than counterbalances this. The seed should be selected which has been grown on peaty soil, or upon land which has been dressed with sea-ware, regard being paid to the previous healthiness of the crop. To secure the best seed neither expense nor trouble should be spared. The smaller potatoes are not equal to the large—the tendency

in the vegetable as well as in the animal kingdom for “like to produce like,” we have observed strikingly illustrated in the potato. About 3 bolls of 4 cwt. each are required for an imperial acre, making the drills 28 inches, and placing the sets from 13 to 15 inches apart. Great attention should be bestowed in the placing of the sets with their eye up, and if they have been previously sprung, so much the better. When planted in drills, the offside horse should be made to walk on the *top* of the drills, and not on the hollow, as is most commonly done. This he soon learns to do, if a person leads him round the first turn. Otherwise, when he walks in the bottom of the drills, he deranges the placed sets. This he is not so liable to do when the sets are placed every third furrow. In a few days after the potatoes are set, the drills should be harrowed down with drill harrows. If the land is rough, a light roller or the turnip harrow may be passed over the drills previous to the harrows. If they are set by the plough every third furrow, the common harrows may be used. Since the appearance of the disease, the period of planting has been advanced from a month to six weeks, early planting being found one preventive of disease. As soon as the land is in order, therefore, planting should commence.

**CLEANING OF THE CROP.**—As soon as they appear in rows, the drill harrow should be again passed over the drills, taking out the middle times, so as not to disturb the roots. No paring away of the drills should ever be attempted. The grubber should be the only implement, and should not be used after the shaws spread 1 foot across. If hoeing is attempted, it should only be done with grape-hoes, or the soil may be loosened with forks, and the weeds should be pulled out by the hand. We advise all growers of potatoes to examine from time to time the distance from the stalk which the young tendrils have attained. The potato, like the ash tree, early sends out its roots throughout the soil, in a way which those who have never examined must be totally ignorant of. The young potato is usually formed at the extremities of these rootlets, which run along from half-an-inch to an inch beneath the surface. All cutting implements, whether plough or hoe, thus necessarily diminish the produce to a very serious extent. We believe that pulling by hand all weeds which appear at the surface is the most profitable method of cleaning the turnip crop.

**FURRING UP.**—If they are to be furred up, this operation should be early effected. One of the greatest enemies which the potato has to encounter next to the potato blight is crows. They dig for the sets with their long bills immediately after planting. After the shaws appear, and as soon as the young potatoes are formed, they again betake themselves to the digging process with an assiduity most exemplary. Three or four in the morning is not too early an hour for an anxious crow with his mate to be at work for the unfledged young. Up to the time of lifting, when the corn fields are not more tempting, they are diligent attenders on the potato field—looking for slugs, forsooth! Crows are truly vermin which should be sacrificed by all possible means in every potato growing district. All romantic

notions about them freeing the land of grub, wireworm, &c., should be confined to the literature of fancy—not transferred either to the practice or literature of the farm. Legendary stories and popular prejudice are in their favor, but they are undoubtedly one of the pests of the farm, and a war of extermination should be waged against them. If public opinion was sound on this point, every rookery would be indicted as a public robbery—at least a nuisance. One shrewd old Highlander (a land-steward where an extensive rookery is kept) used to remark, that “sure the farmers need na grudge the craws their meat, when we gie them lodging.” A more correct estimate of the relative *duties* of the owner of a rookery and the adjacent farmers could not be given.

**TOP-DRESSINGS.**—What are termed chemical manures may be applied to the surface after the plants are fairly above ground. Soot, nitrate of soda, and sulphate of ammonia, and sulphate of soda, we have applied singly and mixed, with and without guano. The combustion of the whole is better than any of them singly. They all produce a marked change on the vegetable growth, the leaf assuming a dark green colour, and the stalks becoming vigorous and full of juice, presenting the appearance of sea tangles or rhubarb stalks rather than of potato shaws. Since the appearance of the disease, however, there is a common impression among many growers, that whatever tends to the vigorous development of the shaws gives greater facility for the depositing and action of the spores. This is assuming that the taint is of that class of microscopic plants such as mildew. Reasoning from analogy, however, we should be inclined to assume, that whatever tends to the vigorous development of the plant should also tend to ward off disease.

It is unnecessary, possibly, to add, that hitherto both scientific and practical men are *at fault* regarding the nature and remedy of this, the most wonderful of vegetable diseases which has occurred in the nineteenth century. Upon its first appearance, there can be little doubt that from one to two millions of the population of Ireland were swept away, partly from the want of food, and partly from partaking of diseased tubers. The continuance of the disease has been the great propelling cause of that tide of emigration which is steadily and progressively flowing from Ireland to America.—*North British Agriculturist*.

#### PERMANENT PASTURES.

*From the Maidstone Gazette.*

SIR,—I am frequently applied to for information on the best manner of laying down permanent pastures, and this being the time for such operations, I beg to offer a few remarks which may be found of some use to your readers.

It is commonly supposed that good pastures cannot be obtained under several years, and this is correct, if there be no other system than that of sowing rye grass and clovers, with, in some cases, a little crested dogstail (*Cynosurus cristatus*), leaving to accident the supply of the other natural and artificial grasses, which are always found in excellent established pastures, numbering from twelve to eighteen kinds.

The herbage is influenced by different kinds of soils, and especially with relation to their state of dryness or wetness; soils have therefore been classed for practical purposes under three heads, viz., light, medium, and heavy. The light embraces soils more or less of a sandy and gravelly nature; the heavy soil embraces clays and heavy loams; and the medium soil varies between these two extremes. We also frequently find a light wet soil approaching to the heavy soils, and a dry heavy soil approaching to the light soils.

It is perfectly well known that certain kinds of grasses flourish most on particular soils and situations, hence the necessity becomes apparent for selecting such varieties as are most suited to the particular soil where the pasture is to be formed.

In commencing operations, care must be taken to have the ground thoroughly drained, cleaned, and brought into good tilth. *Success depends upon this.*

The quantity of seed should be arranged to weight, and not to measure, which will secure one against the fluctuations in the intrinsic quality of the seeds; although a little more expensive, it will be found the cheaper method in the end.—In sowing, mix the *light* seeds together and sow them first, and the heavy by themselves to follow; otherwise the heavy seeds would be at the bottom of the measure instead of being distributed equally with the light. The weight of seed per acre varies according to the nature of the soil. From 35lbs. to 45lbs. with a crop, and 45lbs. to 55lbs. without a crop; the latter mode of sowing is preferable, as the land is not exhausted by the crop, but great advantages will be gained both in saving of seed and in protecting the young plants in summer, by sowing a bushel of barley per acre with it in the spring; or if the sowing takes place in the autumn, a bushel of rye or winter barley, for shelter in winter, taking care that it is cut or eaten off while green. Grasses must be sown very shallow, and not buried, and an iron roll should be run over immediately after sowing, to fix the seeds.

I have known excellent pastures formed by inoculation, that is, by taking pieces of turf about three or four inches in size from an old pasture, and planting them on land (already prepared) about six inches or more apart, and a few grasses sown in the interstices; if this be done in showery weather, success is certain, and in exposed and hilly situations it will be found an excellent plan.

The acknowledged authority for quantity and mixture is Mr. Lawson, of Edinburgh; his *tables* being generally adopted (see *Morton's Ency. of Agri.*, vol. 4, p. 1000); but I have been very successful in making some little alterations in laying down some of our lands in Kent, and I have no hesitation in asserting that the finest pasture possible can be formed in a short time, by having the soil and seed properly prepared and sown.

J. W. EPPS.

Agricultural and Horticultural Seedsman,  
Maidstone and Ashford, England.



AUSTRALIAN GUANO.

One of the most important items of intelligence received from Australia by the recent arrivals is, that of the existence of a large deposit of guano recently discovered in South Australia. The attention of the local government had been immediately directed to a matter of so great importance, not only to the colony itself, but also to the mother country. Instructions were issued for an analysis of a sample of the guano, and the following is the official report thereon, which the lieutenant-governor had ordered to be published for general information :—

“SIR—I beg to forward, for the information of his Excellency the Lieutenant-Governor, the following analysis which I have had made of a specimen of guano which I received from his Excellency some time back, but which our numerous avocations, consequent upon the establishment of this office, have prevented my attending to at an earlier period.

“*Analysis of a specimen of South Australian Guano, in 100 parts of weight.*—Carbonate of ammonia, 3·5; carbonate of lime, 11·5; organic matter, 20·0; silicious sand, 10·0; sulphate of soda, 2·5; muriate of soda or common salt, 10·0; phosphate of lime, 30·0; water, 12·5: total, 100·0.

“From the above analysis it would appear, that the amount of comparatively useless matter in the form of carbonate of lime, silicious sand, common salt, and of water, constituting altogether 44 per cent. of the sample, is unusually large as compared with samples of the best Peruvian guanos. In order the more readily to compare the analysis of this sample with the average result of the analysis of the best genuine guano, as given by Dr. Ure, I subjoin the following table:—

*Fertilising Constituents.*

	Average of Dr. Ure's Analysis of genuine Guano.	Analysis of South Australian Guano.
1 Animal matter .....	50	20
2 Phosphate of Lime.....	18½	...
3 Ammonia, various forms	13	3
	81½	23

*Other Matters.*

4 Silicious Sand .....	1	10
5 Common Salt, Carbonate of Lime, &c. ....	8	24
6 Water .....	9½	12½
Total of other matters...18½	...	46½

“The foregoing analysis of South Australian guano was made by Mr. Jones, one of the chemical assistants in this office, and does not pretend to any extreme accuracy, as the time that could be devoted to this purpose was limited. It should also be observed, that probably a portion of the ammonia, a valuable constituent of guano, present in the sample, might have been volatilised before analysis, it having been kept some time in a warm room.

“I have the honor, &c.,

“B. H. BABBEAGE,

“Mineral and Geological Surveyor.

“The Hon. the Colonial Secretary.”

MISCELLANY.

THE GREEN LANES OF ENGLAND.

No scenes of savage grandeur can rural England boast,  
No rugged glens, nor mountains high that in the clouds are lost;  
But oh, what gentle beauty doth her verdant lanes display,  
Where, all unpruned, the hawthorn thick lines the devious way,  
The velvet sward beneath your feet, the wild rose by your side,  
And all around rich fields of green are spreading far and wide,  
Those mazy lanes of England, you know not where they go,  
Nor, as ye trace their windings, dost thou much care to know;  
Delighted still ye wander their silent depths among,  
A-listening to the music of the throstle's pleasant song.  
Farewell, dear lanes of England, may peace be still your lot;  
When I forget your loveliness, all else will be forgot. A. C.

UNIVERSITY OF TORONTO.

The Annual Convocation of the University for the matriculation of students and conferring of degrees, was held in the Legislative Assembly Chambers on Tuesday the 19th ultimo. There was a large attendance, and the proceedings were as usual, very interesting. The Vice-Chancellor presided until the distribution of the prizes; the Pro-Vice-Chancellor then took the chair, which he occupied until the close of the meeting. The following gentlemen were admitted to the degrees named.

I.—ADMISSION TO DEGREES.

M D.—W. O. Eastwood, B.A., M. B. McKenzie, B.A., Wm. Winer, B.A., Wr. Boyd, H. Desmond, Cl. Freeman.

M.A.—Adam Crooks, B.A., M. Barrett, B.A.

B. A.—I. H. W. Peterson, 2, J. T. Huggard, 3 E. J. Alma, Wm. Bettridge, Wm. Boyd, S. J. Bull, Wm. Meudell, Wm. L. Lawrason, Wm. Woodruff.

II.—MARTICULATION.

†1, N. O. Walker, †2, N. Kingsmill, †3, M. M. A. Crombie, †4, Wm. Linklater, 5, T. McMicking, 6, J. E. Sanderson; Wm. Anderson, R. L. Ball, T. Benson, A. J. Cattanaeh, E. Goodman, R. Hume, A. Kirkpatrick, A. N. Laidlaw, Wm. McClure, J. T. McKenzie, Nelson McGarvin, Alex. McNab, Thos. Miller, Thos. Morrison, Wm. S. Scott, Wm. Tassie, James Whyte.

III.—RECITATION OF PRIZE COMPOSITIONS.

*English Essay*, by A. M. Clark, B. A. Subject—“Tadmor of the Desert.”

*Translation into Greek Tragic Iambics*, M. M. A. Crombie, Freshman. Subject—Shakspeare; Macbeth—Act IV. Sec. 3, from “Let not your ears” to “never finds the day.”

*English Poem*, by H. W. Peterson, Cand. B.A. Subject—“Jerusalem.”

Prizes were also awarded to A. E. Rykert, for Latin Verse, J. Brown, for Latin Prose, S. J. Bull, for English Verse, and H. W. Peterson, for English Prose.

After the ceremony had been concluded, Dr. McCaul welcomed the successful candidates for scholarships to the enjoyment of the advantages which they had earned for themselves by the examination which they had passed—an examination creditable to their Teachers, and honorable to themselves. The Upper Canada College had more than sustained its well-earned reputation, for both the first scholarships had been attained by pupils of that Institution. The Toronto

† University Scholars.

Grammar School had also been again successful. One of its pupils had won the distinction of being second in both Classics and Mathematics. The other scholar on this occasion was a pupil of the Edinburgh Normal School, from which the University would be glad to receive more students, equally well prepared with their successful candidate at this examination. The Dr. then adverted in warm terms of praise to the character of the late Head-Master of the Toronto Grammar School, Mr. Marcus Crombie. An erroneous statement had gained some circulation, which he desired to contradict, that the majority of the students were composed of young men, who had obtained scholarships. Such was not the fact. Out of 180 Matriculated Students there were but 33 scholars, and of those Matriculated this day there were but 4. The worthy then explained the changes, which have been made relative to the scholarships, and concluded with a warm and exciting description of the advantages which had resulted in the mother country from the establishment of similar rewards and aids. Why may we not—he would ask—expect similar results here? His experience proved that there were equally good materials, and he confidently looked forward to equally good results. The assertion that the youth of Canada were an inferior race was an insult, a libel on her children, and a statement which was every day proved to be false. It was believed only by those who held the long exploded maxim—"Anything is good enough for a Colony;" whereas those, who had acted on this principle, had learned by bitter experience, that the person who is good for nothing at home, continues to be good for nothing here.

#### COUNTY OF YORK SPRING FAIR,

On Wednesday, the 20th ult., the County of York Spring Fair, chiefly for stud-horses and bulls, was held on the open ground, on Palace street, near the jail. There was a large number of stud-horses, some of them very good specimens, and some of them very heavy, rather, to appearance, too heavy for a horse of all work for this country, and better fitted for a London dray. On the whole, however, show was good. There were some good grade bulls. There was a large attendance of visitors, considering that that the show was principally for the two kinds of animals. The following prizes were awarded.

##### BLOOD HORSES.—STALLIONS.—FIVE ENTRIES.

1st	Mr. George Cooper, York	- - -	£3	0	0
2nd	G. L. Ross, of Toronto	- - -	2	0	0
3rd	do do	- - -	1	0	0

##### HORSES FOR GENERAL PURPOSES.—ELEVEN ENTRIES.

1st	Nathaniel Davis, York	- - -	£3	0	0
2nd	William Brown, Etobicoke	- - -	2	0	0
3rd	William Bowes, Vaughan	- - -	1	0	0

##### DRAFT.—SIX ENTRIES.

1st	David Roundtree, York	- - -	£3	0	0
2nd	John Bothwick, Scarboro'	- - -	2	0	0
3rd	J. W. Crawford, Scarboro'	- - -	1	0	0

##### DURHAM BULLS.—SIX ENTRIES.

1st	N. Davis, York	- - - - -	£2	10	0
2nd	John Dew, York	- - - - -	2	0	0
3rd	E. W. Thomson, York	- - - - -	1	0	0

##### DEVON BULLS.—NO ENTRIES.

##### AYRESHIRE BULLS.—ONE ENTRY.

1st	R. L. Denison, York	- - - - -	£2	0	0
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##### GRADE BULLS.—TWO ENTRIES.

1st	R. L. Denison, York	- - - - -	£2	10	0
2nd	John Dew, York	- - - - -	2	0	0

Judges of Horses—Messrs. Denison, Paul, and Allen. Judges of Cattle—Messrs. Bird, Wheeler, and Scott.

#### PECULIAR MODE OF USING POTATOES IN NORWAY.

By M. Is. Hy. BRER, *Flekkefjord, Norway.*

The intention of this operation is to alter the flour or starch, which the potatoes contain, into sugar, by a simple process, and thereby render the potatoes more nourishing to animals. The potatoes are first washed, and then steamed or boiled in the common apparatus, which, I presume, most farmers in Scotland possess. When well boiled, the potatoes are to be crushed as *quickly* as possible between two wooden rollers, and immediately put into a wooden vessel or cooler wherein has been poured some water of the temperature of 75° Fahr. The crushed potatoes are then mixed well with crushed barley-malt, 6 lbs. malt for every 100 lbs. of raw potatoes, the malt being mixed by little at a time, the warmth of the mass being constantly maintained not under 140° F., nor above 155° F. It is very material to keep the said warmth, as it is indispensable to extricate the sugar. When the mass has been well mixed, the vessel must be covered with boards and a blanket, and the mass let stand from two to three hours, and stirred up in that time four or five times, its warmth not being allowed to sink under 140° F.

The mass, when well prepared, is a sweet brownish-like syrup, and is ready for use.

It is advisable to prepare the requisite quantity of potatoes every day as they are wanted, when the air is mild, or at least every second day.

The cooler must always be kept very clean, and, therefore, after being used, be washed well with hot water, sprinkled over with a little lime, in order to expel the acid, then rubbed and washed again, and dried with a cloth, letting it stand uncovered exposed to the air till the next time it is wanted.

It is evident that this operation can be executed by any one with a thermometer in his hand; and in fifteen, or at most twenty minutes, two quarters of potatoes can be crushed and mixed, as I know from experience.

Malt is an expensive article in Scotland, on account of the duty; but I presume there can be nothing against farmers making green malt for their cattle. For that purpose it is easily made. A farmer has only to steep barley three days in cold water, lay it afterwards in a heap in a shady place till it begins to sprout, turn it over, observing that the barley on the outside is turned inside of the heap, which should now be laid flat, about a foot and a half high, or less if the wea-



ther be mild. When it has sprouted a little more turn it over again, and so on till the sprouts are a good quarter inch in length. The malt should then be spread very thin, to dry in the air or upon a kiln.

Experience will soon tell that potatoes thus prepared will enable animals to extract more nourishment than from the same quantity of raw or boiled potatoes. The prepared potato mass is usually given, with chopped straw, to cows, oxen, and sheep, and is eagerly devoured by them; and it has been ascertained that a mass of 12½lbs. of potatoes, ¾lb. malt, with 4 lbs. of chopped straw, and 4lbs. of hay, are equal to nourish a little Norway cow fully as well as 20 lbs. of hay alone.

This method of preparing potatoes was contrived by a man in Norway about ten years ago. It was recommended to the farmers by the Norway Agricultural Society, and has been much used by the more enterprising farmers. The Royal Agricultural Society, at Copenhagen, has also recommended the method most earnestly; and, at its request, Professor G. Forchhammer has examined the composition chemically; and he states, among other things, that 200lbs. of potatoes, with 12 lbs. of malt, gave him 65lbs. of very thick sweet syrup, though the experiment was made in the spring; but that 12½lbs. of potatoes, ¾lb. of malt, 4lbs. of straw, 4lbs. of hay, do not contain so much nitrogen as 20lbs. of hay. The milk from the mass will give little cheese, but much better; little flesh, but much fat. He therefore recommended to add 2lbs. of oilcake, when the food will be equal to 24lbs. of hay; and he concludes thus, on the 16th June, 1842:—"Considering that this operation can be executed by every farmer, with apparatus he is mostly in possession of, I regard it to be of the highest importance to extend this method of preparing a nourishing food for cattle, at so low a price as this, as it will essentially contribute to the welfare of the farmers."

Many reports from different persons in this country and in Denmark have since been published, and they have stated that one quarter of prepared potatoes are equal to two of raw or of boiled, and it is highly recommended by all. One reporter says, "I have given my thirty-six milch cows each 12½lbs. of potatoes, ¾lbs. of malt, 10lbs. of cut barley and oat straw, and 4lb. of straw, with no hay from the middle of December till spring, and they have done uncommonly well. For fattening swine and sheep nothing can be cheaper."

When the method of preparing potatoes in the manner described has been approved of in Norway, where potatoes are dear compared with hay, and where cows can be kept, and oxen and sheep fattened in the summer on the mountains for almost nothing, and where flesh, therefore, is low in price, and seldom worth more than 1½d. or 2d. per lb., I consider it will pay better in Scotland and in England, and, as far as I am able to judge, it will be of considerable service to the United Kingdom, and it will come into general use if it were only tried; for I am persuaded that the farmer who has fed his cattle for only one month with potatoes thus prepared will never

leave it off. *When the turnips are consumed the potatoes are still in store*; and these, thus prepared, will be the means of saving numbers of cargoes of oil cakes.—*Journal of the Highland and Agricultural Society.*

#### HIGHWAYS OF THE OCEAN.

An article in *Chamber's Edinburgh Journal*, entitled "Steam round the Cape," contains the following explanatory remarks:—

"Persons who do not pay special attention to nautical matters, are likely enough to suppose that, considering the large number of vessels at sea, the surface of the ocean must be dotted over, almost in every part, with the sails of the countless fleet. This, however, is not the case; the ocean, like the land has its frequent highways, and its wide regions of loneliness. If an observer, furnished with a forty-Herschell-telescope power of vision, could be elevated to a height great enough to give him a view of the great Atlantic, he would be struck by beholding hundreds of vessels following each other on certain lines, along a very irregular course, while over a large portion of the surface not a sail would be visible.

"Thus, he would see the ships which leave this country for the Cape or India, pursue at first a south-westerly course until they reach the neighborhood of Madeira, then keep more directly to the south, at a safe distance from the African coast, until they cross the line; then stretch away again to the south-west, in the direction of south America, till they gain the zone of westerly winds; and finally making a rather short turn into these winds go bowling along before them to the eastward, till they arrive at the Cape, or else, if so directed, pass to the southward of it. On the return voyage, a similar circuitous route is pursued, although the courses to some extent are reversed, the widest circuit or deviation from the direct line being made in the northern instead of the southern hemisphere.

"In the extensive space on either side of these frequented routes, few vessels will be seen.—Here and there an African trader might occasionally be perceived, dodging from port to port, or a slaver, scudding swiftly across the ocean with a royal cruiser following steadily in her track, like a bloodhound, in pursuit."

The writer proceeds to remark, that steam vessels possess an advantage over sailing ships, in being able to strike out a new and direct route for themselves.

#### CURING MEAT.

For round of beef or legs of mutton for hanging, mix 1½lb. of salt, ½oz. of powdered saltpetre, or 1lb. of salt, ½lb. of sugar, ½oz. of powdered saltpetre, rub in and sprinkle on either of the above, mixtures in proportion to the quantity given to 14lbs. of meat. The meat should be kept in an earthenware pan or a deep wooden tray, and turned twice a week during three or four weeks, when the round of beef should be tightly bound with a coarse linen tape, and hung in a kitchen in which a fire is constantly kept for three weeks. The weight lost will be from

five to six per cent. in salting, and as much more by drying. Pork, hams, and bacon, may be treated in a similar way, but will require double the quantity of salting mixture; and if not smoke dried, they should be taken down from hanging, after three or four weeks, and kept afterwards, in boxes or tubs, amongst dry oat husks.—*Morton's Cyclopaedia of Agriculture.*

#### WHITE BELGIAN CARROTS.

Mr. Edward Smith, of Isabel Mead, Harbledown, near Canterbury, favoured the Council of the Royal Agricultural Society, on the 9th inst., with the following account of the cultivation of the white Belgian carrot:—"I beg to offer a few remarks on the cultivation of the white Belgian carrot, and the system I have followed for several years in Wales upon a poor stony soil scarcely six inches deep. I plough the land early after harvest, either wheat, barley, or oat stubble, and in November, if dry weather, balk or ridge up the land to remain for the winter. About the middle of April, if the ground will work well, harrow and pick off all the couch or grass, and again strike out the furrows from 20 and 24 inches apart, and haul or cart in the balks about 20 loads of dung, and cover in the same for turnips. I have found this plan answer so well that I have adopted it in preference to the usual way of putting the dung on either in the autumn or spring, and ploughing it in, and have always found the carrots free from scab, and quite straight, and have had far better crops. Upon the ridge I draw with a small hoe a shallow furrow, and sow the seed by hand with a tin two feet long made like a funnel. I have had a much better plant by sowing by hand, which amply pays for the extra expense. The seed is then covered in by a boy following with a rake. I find from the middle of April until the first week in May the best time for sowing the seed. I do not approve of too early sowing, as the young plants are apt to be cut off by the spring frost, and much stunted and injured, and never appear to thrive so well after. I find about 4lbs. of seed sufficient for an acre, and I wet the seed a week before sowing, mixed with a little sand. As soon as the carrots appear above the ground, so as to be seen in the rows, I take advantage in dry weather to hoe between the drills, to give air to the plants. When the carrots come out into second leaf, and to be clearly seen from the weeds, I have boys to pull the weeds in the rows by hand twice before I thin any of the carrots as it gives an opportunity of seeing where they should be left. I leave the carrots about 4 or 5 inches apart, and never allow the hoe between the plants, as they can be done much better by hand, and without injury. I do not use the horse-hoe until the carrots get up strong, as the earth is apt to fall upon the crown. I have found by taking the earth from the carrots after they are about half grown they have been much larger. I usually commence digging the roots about the middle of November, and I lay them in lumps about 40 bushels on the field, or cart them off into clamps and put a good covering of straw without earth, unless very sharp frost. I have had the

white carrot kept in this way up to the middle of May, and have been quite sound and as good as when first put in, which is a great advantage in the spring for sheep and other stock, when the swede turnip is not so good late in the season. I think the white carrot might be grown with much success in many soils, in addition to the swede, as there is sometimes a failure in one where there may not be in the other.

#### RECLAIMED SAND BANKS IN HOLLAND.

All voyagers between the Maas and the Scheldt, along the inland waters of Holland, have noticed the immense sand banks lying uncovered when the tides are out. Near Bergen-op-Zoom these sand banks are of enormous size, the abodes of innumerable seals and porpoises. Plans for reclaiming these islands, and for connecting them with the main land by means of a double sea wall, have been often broached; but while the Dutch possessed a magnificent colonial empire, the cost and labor of shutting out those stormy tides appeared to the merchants of Amsterdam as wholly disproportioned to the gain. Now, however, that the energies of Holland are contracted into a comparatively narrow space, every rood of land in the old country is gaining in value—and gigantic works like the draining of Haarlem Lake and the inclosure of Batt are undertaken in earnest. The latter works, including 36,000 acres, were commenced on the 10th of July last, and already very nearly 3,500 of these acres have been partially reclaimed by embankments. As the land reclaimed by these great works is from six to eight feet above the level of low water of spring tides, it will drain itself, having in this respect an immense advantage over the reclaimed land of the Haarlem Lake, which is from 6 to 11 feet below that level. The first great outer bank is already completed. During the winter the labours of the workmen will be applied to the internal completion of the portion thus reclaimed; and to the construction of a canal connecting the Eastern and Western Scheldt between Hanswere and Wemelding, which the company have undertaken to make in lieu of the branch of the Scheldt between Batt and Bergen-op-Zoom, which their reclamations will include. The canal to supersede for purposes of navigation, the branch of the sea thus recovered will be five miles in length, and have eighteen feet of water. Five hundred men are at work upon it. Sir John Rennie is the engineer employed. The benefits of this reclamation of land are more than local. To the King of Holland it will give forty square miles of additional territory, to his subjects a large extension of employment and wealth, and to the commerce of Europe it will yield 180,000 quarters more of wheat per annum.

#### THE COAL ERA OF GREAT BRITAIN.

It is indeed remarkable that so small a country should furnish so mighty a supply of fuel. England has 12,000 square miles of coal era—nearly one-tenth of the entire area of the Island; but still this bears but a small ratio to the total quantity in all countries. According to the estimates of Professor Austed and Mr. Taylor, the ascer-



tained area of all coal strata in the world is not less than 150,000 square miles. And yet the annual amount of coal worked and brought to light in the British islands is nearly double that of all other countries taken together—so enormous are their colliery operations. The number of coal fields in these islands, comparing districts detached from all others, is about thirty; the number of distinct working seams in these coal fields varies from one to eighty-four the thickest seam in any one field varies from three to forty feet; and the aggregate thickness of all the seams in each field varies from three to two hundred feet. From these various coal fields there are now extracted not less than 35,000,000, the value of which, including transit to the place of consumption is about \$90,000,000.—Of the \$90,000,000. it is supposed that about one-half is the value at the pits' mouth, and the other half the value of the transit to the consumer. The fixed capital employed in the British coal trade including mining machinery, and transit machinery is roughly estimated at \$50,000,000.

#### A FEW WORDS ABOUT SLEEP.

No one of active mind should try to prevent sleep, which in such persons, only comes when rest is indispensable to the continuance of health. Infact sleep once in 24 hours is as essential to the existence of mammalia as the momentary respiration of fresh air. The most unfavourable condition for sleep cannot prevent its approach. Coachmen slumber on their coaches, and couriers on their horses, while soldiers fall asleep on the field of battle, amidst all the noise of artillery and tumult of war.—During the retreat of Sir John Moore, several of the British soldiers were reported to have fallen asleep on the march, and yet they continued walking onward. The most violent passions and excitement of mind cannot preserve even powerful minds from sleep; thus Alexander the Great slept on the field of Arabela, and Napoleon on that of Austerlitz. Even stripes and torture cannot keep off sleep, as criminals have been known to sleep on the rack. Noises, which serve at first to drive away sleep, soon become indispensable to its existence; thus a stage coach stopping to change horses, wakes all the passengers. The proprietor of an iron forge, who slept close to the din of hammers, forges, and blast furnaces, would wake if there were any interruption to them during the night; and a sick miller, who had his mill stopped on that account, passed sleepless nights till the mill resumed its noise. Homer, in the Iliad, elegantly represents sleep as overcoming all men, and even the gods, except Jupiter alone. The length of time passed in sleep is not the same for all men; it varies in different individuals and at different ages; but it cannot be determined from the time passed in sleep, relative to the strength or energy of the functions of the body or mind. From six to nine hours is the average proportion, yet the Roman emperor, Caligula, slept only three hours, Frederick of Prussia and Dr. John Hunter consumed only four or five hours in repose, while the great Scipio slept during eight.

## Poetry.

### SPRING.

O Spring! of hope, and love, and youth, and gladness,  
Wind-winged emblem! brightest, best, and fairest!  
Whence comest thou, when, with dark winter's sadness,  
The tears that fade in sunny smiles thou sharest?  
Sister of joy, thou art the child that wearest  
Thy mother's dying smile, tender and sweet;  
Thy mother Autumn, for whose grave thou bearest  
Fresh flowers, and beams like flowers, with gentle feet,  
Disturbing not the leaves, which are her winding-sheet.  
—Shelley.

### ON PATIENCE.

That man on earth, whom meek-eyed Patience trains,  
Beyond the grave immortal pleasure gains.  
On Providence below the virtuous rest,  
And deem whatever Heaven appoints is best.  
'Thus resignation smooths life's thorny way,  
Through death's dark vale to realms of endless days.

## EDITOR'S NOTICES.

### NOTICES TO CORRESPONDENTS.

**DRAINING TILES.**—J. B. O., Beamsville; we cannot state the prices of draining tiles, as very few are made and the prices vary considerably, we understand, in different places. The Board of Agriculture at their last meeting resolved on offering facilities for the introduction of Machines for draining pipes.

**GOLD OF PLEASURE.**—J. C., Guelph; want of time and space has prevented us acceding to your request in this number; we will prepare some remarks on the cultivation and uses of this plant in our next.

## Advertisements.

### FRESH GARDEN, FIELD AND FLOWER SEEDS.

THE Subscriber begs to inform his Friends and the Public, that his Stock of Fresh Seeds for Spring sowing is now complete.

The Stock of Agricultural seeds is well selected, comprising a fine Lot of Imported

Purple Top Swede Turnip	Yellow Globe Mangel Wurtzel.
Yellow Aberdeen do.	Long Red do. do.
White Globe, and other varieties.	Spring Tares, or Vetches.
White Belgian Carrot.	Red and White Clover.
Long Orange Altringham, &c., &c.	Timothy, and other Grasses.
Field Parsnips.	100 Bus. Good Seed Barley, (weighs 52 lbs. to the bushel.)
Spring Rape & Cow Grass	600 Bus. common Oats.
White Marrow-fat Peas.	100 " Early Ash Top Potatoes.
Blue Imperial	200 " Early June, (a fine sort.
Early and Late Field do.	
Scotch Oats, (imported.)	
White Sugar Beet.	

Price of Potatoes—\$1 per Bushel.

The subscriber has also a full and general assortment of all kinds of GARDEN SEEDS, suitable for the country—a catalogue of which, with directions for sowing seeds, can be had GRATIS on application.

Twenty Packets of choice Flower Seeds will be sent free by Post to any part of the Province, to the address of any party remitting \$1 free of postage.

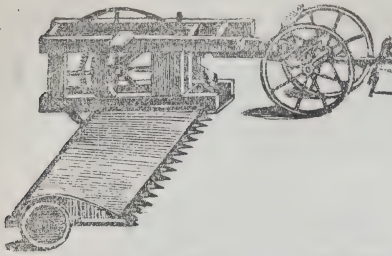
JAMES FLEMING,

Seedsman to the Agricultural Association  
of Upper Canada.

Toronto, 24th March, 1853.

149-161

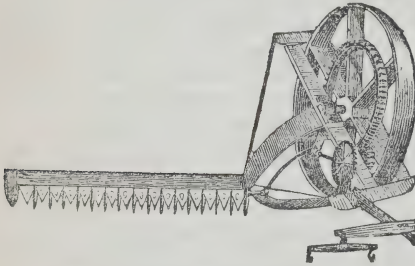
**IMPORTANT TO FARMERS.**  
**HUSSEY & BURRALL'S**



**IMPROVED REAPING MACHINES.**

THE SUBSCRIBERS having opened an Agricultural Warehouse and Seed Store in Port Hope, C.W., are now manufacturing the above Machines extensively. Also

**KETCHUM'S**



**MOWING MACHINE,**

On an improved scale of stopping the motion on the knives by means of a lever.

These are the machines which have taken the first Prizes at the New York State Agricultural Test at Geneva last harvest, in competition with *eleven* different kinds of Reapers and Mowers, and they have now become the *standard* and *model* Machines, while others are altering and experimenting with doubtful success.

They are warranted to give satisfaction, and a fair and thorough trial is offered before the sale is made valid.

Any person wishing to purchase one of those Machines can obtain satisfactory information as to their performance and satisfaction by referring to the following gentlemen Farmers, who have used these Machines, and to whom they trust for an impartial repute:—

John Wade, Esq., P. Hope,	Seir VanCamp, Bowman-
Nath. Nichols, Cobourg,	ville.
George Black, "	R. Simpson, "
John Middleton, Clarke,	J. B. Warren, Oshawa,
Z. Pollard, "	Joseph Gould, Whitby,
Sam'l Wilmot, Darlington,	John Cameron, York Mills
John Smart, "	McIntosh & Walton, Tor-
	onto,

And several others whose names are omitted. They also keep on hand the *Plows* which have taken the first Prizes at the Provincial Fair of Toronto, in 1852, (in a variety of 14 different sizes) and have since proved themselves above competition.

Wheat Drills, Seed Sowers, Harrows, and Cultivators for one or two horses, and all manner of Agricul-

tural Implements and Machines perfected for the use of the Farmer, from an Apple Parer to an eight horse Power.

Farm Produce, such as Peas, Timothy Seed, and Clover Seed, taken in exchange for machinery, and a liberal discount for cash. All articles warranted, or price refunded. Farmers wishing to purchase Machines will do a favor by ordering immediately so as to avoid any delay or disappointment.

JOHN RAPALJE & Co.,  
Port Hope, C. W.

Messrs. McIntosh & Walton, of Toronto, are Agents for the above Firm, and have their implements and machines for sale at low prices.

April, 30th, 1853.

3in.

**PURE BRED MALE STOCK,**

AT

**PRIVATE SALE AT MOUNT FORDHAM**

*Eleven Miles from the City Hall, New York.*

I WILL Sell and Let from 10 to 12 Short Horned Bull Calves; 4 Devon Bulls and Bull Calves, and from 12 to 15 South Down Rams. The Annual Sale by Auction will be omitted this year, as I wish to reserve all the females, having recently purchased another farm, to enable me to increase my Breeding Establishment. My Hog Stock, including all the Spring Litters, are engaged. Catalogues, with full description and pedigrees of the above Bulls and South Down Rams, with the prices attached, can be obtained by the 15th of April next, from the Subscriber, or at any of the principal Agricultural Stores, or from the editors of the principal Agricultural Journals.

L. G. MORRIS.

March 23rd, 1853.

3m

**WANTED,**

**100** JUNE and DECEMBER Nos. of the "AGRICULTURIST" for 1852. Subscribers who can spare any of the above Nos. will be paid by sending them to this Office.

**The Canadian Agriculturist,**

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, to whom all communications are to be addressed, is published on the First of each month by the Proprietor, *William McDougall* at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

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N. B.—No advertisements inserted except those having an especial reference to agriculture. Mat- ters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.



# THE CANADIAN AGRICULTURIST, AND Transactions

OF THE  
BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. V.

TORONTO, JUNE, 1853.

NO. 6.

## REPORT OF THE CARLTON AGRICULTURAL SOCIETY FOR 1852.

At the General Annual Meeting of the COUNTY OF CARLTON AGRICULTURAL SOCIETY, held at Wood's Hotel, Nepean, pursuant to Public Notice, on Tuesday, 15th February, 1853.

The President, Wm. Stewart, Esq., read a report of the Directors, setting forth the financial affairs of the Society, &c., and a report drawn up by John Robertson, Esq., was also read,—which reports, on motion of G. W. Baker, Esq., seconded by Mr. John Clark, sen., were received and adopted.

### REPORT.

The Directors of the County of Carlton Agricultural Society, for the year 1852, beg leave to Report to the General Annual Meeting as follows:—

That the Society was re-established under the Act 14 and 15 Vic. cap. 127, on the 17th day of February, 1852.

That the Society consists of 94 members whose subscriptions amount to £60 15s., as given in detail herewith, statement No. 1.

That the Society have during the year awarded and paid in Premiums the sum of £123 7s. 6d., as given in detail herewith, statement No. 2, classified under the following heads, viz:

Field Crops.....	£22 10 0
Stock.....	63 10 0
Agricultural Implements.....	6 10 0
Horticultural &c. Products...	22 0 0
Ladies Department.....	1 10 0
Ploughing.....	8 2 6
	<hr/> 124 2 6
Less, 2nd premium ears old heifer not decided .....	0 15 0
	<hr/> 123 7 6

The receipts as given in detail in statement No. 3 are as follows:

Balance from last year.....	£ 5 4 7
Members Subscriptions.....	60 15 0
Government Grant.....	250 0 0
Townships of Fitzroy, Marl- borough & North Gower }	48 5 0
Cash for 7 Nos. Agriculturist	0 17 6
Subscriptions paid since 1st August last, 1852.....	1 7 6
	<hr/> 366 9 7

### EXPENDITURE.

Refunded and paid proportion Govt. Grant to Fitzroy, North Gower and Marlbo- rough.....	158 5 0
Premiums.....	123 7 6
Contingent expenses.....	36 8 11
Balance in hands.....	48 8 2
	<hr/> 366 9 7

That in pursuance of the resolution of a Special Meeting, your Directors deem it advisable to apply the surplus funds for procuring Spring Wheat and Clover Seeds, to carry out which the Secretary put himself in communication with William Evans, Esq., Secretary of the L. C. Agricultural Association at Montreal. While they beg to record the kind attention of Mr. Evans, they regret to hear from him that the Black Sea Wheat contemplated to be imported through Mr. Leclerc, cannot be available for the Spring ensuing, but will be for the Spring of 1854; and that Mr. Evans has been good enough to send specimens of white and red Dutch Clover Seed recently imported, which can be procured from Mr. Shephard, Seedsman, Montreal. It will, therefore, depend upon your Directors Successors in office, how far this arrangement will be carried into effect.

Your Directors, in resigning their trust to the Society, at the close of the year, have upon the whole good cause for congratulation, that the benefits of Agricultural Societies for several years past are manifesting themselves in the County of Carleton, although considerable apathy and indifference has been shown by many and scope enough yet left for improvement, they have great pleasure in stating that many members of the Society are enterprising and progressive.

Very considerable prejudice formerly existed as to the capabilities of the Ottawa Section of Country for production, &c., yet your Directors feel confident in stating that, there are several farms in the County that with regard to drainage, fencing, culture, productions and buildings, will compare favorably with any other farms in the Province. As an instance of production, they would mention that this season one of their number, Mr. Davidson, of Nepean, raised a large field of Fall Wheat, fifty-five bushels to the acre, weighing 64 lbs., to the bushel.

They also beg reference to the following particulars prepared by John Robertson, Esq., one of their Vice-Presidents,—submitted, &c.

[Signed] WM. STEWART,  
President.

Remarks upon the state of Agriculture, &c., in the County of Carlton, by John Robertson, Esq., one of the Directors :

The farms in this County are in size from 50 to 600 acres, the average being about 150 acres. It is only a few years since anything like system has been attempted, partly from the newness of the settlement with want of skill and capital. Our best Farmers follow what is called the convertible system of husbandry, and as the staple of the County is Wheat and Pork, the energies of the farmer are directed to raising them. On breaking up Clover Lea, Oats are sown, then Peas, afterwards Fall Wheat with manure, next hoed crops, well manured, and wrought, then spring wheat with grass seeds, say 4 or 5 lbs. red clover, 2 lbs. white clover, and 9 or 10 quarts of timothy seed per acre, getting one course of harrowing with a light or bush harrow and rolled. Sowing half a barrel of plaster with the grass seeds brings on the grass seeds rapidly, but equal quantities of salt and plaster would have a better effect. Both Red and White Wheat are used for Fall sowing. Many farmers think the white wheat is most subject to injury by the fly. The fly has been very destructive the past season, doing most injury where the ground was wet and not underdrained. Many say that this County will not sell half as much wheat this year as was sold last year. Steeping seed wheat 24 hours in a solution of sulphate of copper, (blue vitrol) then drying with quick lime effectually prevents smut.

The variety of wheat called Black Sea, has been used for spring sowing for a number of years, but the Millers affecting not to like it and making a great difference in price, farmers were induced to try other kinds. Scotch or Fife Wheat seemed to please best, but various accounts are given of it. The writer of this sowed part of a field with it and the remainder with Black Sea wheat, the land having been limed with 70 bushels to the acre three years before; it had been well manured the year before the

wheat was sown and underdrained, and potatoes or turnips taken off it. The Black Sea wheat gave 33 bushels per acre, the Scotch wheat about half that quantity, and it took 16 days longer to mature. Both weighed 64 lbs. per bushel. The fly was the cause of the failure.

The appointment by the Legislature of a Minister of Agriculture leads to the hope that much greater facilities will be afforded our farmers for procuring seeds of the best and most suitable qualities of all descriptions, than could possibly be done by Societies or individuals.

In agricultural machinery and implements much progress has been made; Threshing Mills are common. There are many Iron Ploughs, some improved Harrows, subsoil Ploughs, Hay Cutters, and a few seed Sowers. There is, however, a great scarcity with many of our farmers of the more common and necessary implements of husbandry, which, together with want of skill and the unfortunate system pursued of over-cropping, makes our average crop so much lower than it ought to be. There is no doubt, but that with better management our crops might be increased at least one-third. Great improvements have been made in draining, manuring, and in fencing; as also in farm dwellings and out-houses. Many good dwellings, some of stone, covered with tin, others of wood, with good barns from 100 feet downwards, have been erected within a few years. In the wintering of stock also, a great change has taken place, Cows are warmly housed, and some yards are divided into Pens where cattle of the same age and strength can be fed and kept safely together.—A few yards have spouts to all the surrounding buildings by which the water is conveyed into a tank, in which the drainings of the Cow-house, &c., are collected, and from thence carted to wherever it may be required, in barrels or boxes, either of which ought to be supplied with a Valve and Hose, similar to those in use for watering streets.

In horned cattle some improvement has taken place, but not to the extent to be wished for. There are few of pure breed, but some good grade cattle of mixed breed. The prices for dairy produce or beef, being low, deters farmers from paying high prices for cattle, but as rail and macadamized roads are in progress around Bytown, and other movements likely to increase the demand for farming produce of all kinds in that market, farmers look forward for a corresponding increase in prices. There is a decided improvement in Hogs; a better breed has been introduced, but the better feeding and housing has caused the greatest change. There is no difficulty in feeding to 400 or 500 lbs. at 18 months old, although packers prefer Pigs of 300 lbs. as most suitable for barreling, there being little demand for hams. As there is no doubt but that 20 barrels of Pork is sold here at pre-



sent for the one that was sold 10 years ago, it becomes important to know the best and cheapest way of feeding. Many believe that oats, barley and peas broken fine and soured with skimmed milk or whey is as good feeding as need be used; from experiments made it has been found that one bushel of barley will feed as long as  $5\frac{1}{4}$  bushels steamed potatoes, make firmer pork, and cause a great saving in labour. There are not many sheep in this county and they are a mixture of every kind; we have a few good Leicesters. The price of both wool and mutton is so low that sheep raising is generally reckoned a loosing business, and unless prices mend, there is no reason to believe that sheep will materially increase in numbers or improve in quality. Good Horses are not so plenty in this county as is desirable; with a few exceptions they are too small and too light for either work or travel. The Directors of this Society have had it under consideration to endeavor to remedy this evil, and have concluded to recommend to their successors, that a premium be offered by the Society for a horse of undoubted pedigree, to stand for Mares in this County the ensuing season at moderate rates.

It is desirable that some young stock, particularly horned cattle, should be bought by the Society; and also that a part of the premiums

given to successful competitors at the annual exhibition should consist of Books treating of agricultural pursuits.

Some account of the very superior management of a few farms in this County, although too long to be embraced in this report, if published in some of the Agricultural Journals, would no doubt prove both useful and interesting.

All of which is submitted.

[Signed] JOHN ROBERTSON.

G. W. Baker, Esq., having been called to the chair, the following gentlemen were duly elected office-bearers of the Society for the current year:

William Stewart, Esq., President.

John Robertson and John Thompson, Esqs., Vice-Presidents.

Samuel Davidson, Braddish Billings, E. L. Woods, John Graham, Wm. Byers, Clements Bradley, and George Patterson, Esquires, Directors, and Mr. George R. Burke, Secretary and Treasurer.

[Signed] G. W. BAKER,  
President.

GEO. R. BURKE, *Secretary.*

The County of Carlton Society enrolled in the year 1852, 94 members subscribing amongst them the sum of £60 15s. The following is the Balance sheet for the year 1852.

Dr.		County of Carleton Agricultural Society in account with George R. Burke, Treasurer.		Cr.
1852.		£	s.	d.
Feb'y. 24	To paid for Minute & Acct. Book	0	5	6
" "	" 10 copies Hinds' Chemical Lectures.....	1	0	0
" "	" G. Buckland, 40 Nos. "Agriculturist".....	5	0	0
April 23	" do 10 do	1	5	0
Oct. 8	" Sundries for the Exhibition..	0	5	10½
" "	" Premiums to Ploughmen...	8	2	6
" 9	" Peter Armstrong, for dinner to Society .....	3	7	6
" 14	" Dawson Kerr for Printing...	1	0	0
" 19	" North Gower and Marlboro' Ag.Soc. subscription & proportion of Gov. grant, 1852	79	5	0
" "	" Fitzroy Ag.Society subscription and proportion of Gov. Grant for 1852 .....	79	0	0
" 23	" J. Brown, W. Scobie, and W. Heron, judges of field crops	5	12	5
" 25	" C. Bradley, 2 days' hire of horse.....	0	10	0
" "	" G. J. Burke 2 days notifying members .....	0	10	0
" 27	" J. Joyce, distributing bills..	0	1	3
Nov. 8	" Allowed G. R. Burke for services as Sec. and Treasurer	15	0	0
" 20	" W. J. Powell for Printing...	0	18	9
" "	" Postage, &c.....	1	12	8½
1853.		£	s.	d.
Feb'y. 1	" Premiums for field crops....	22	10	0
" "	" do stock.....	62	15	0
" "	" do agricl. implements	6	10	0
" "	" do horticult'l products	22	0	0
" "	" do ladies' department	1	10	0
" 5	" Postage, letter from Mr. Evans	0	0	3
" 14	" Cash, balance in Bank of Upper Canada .....	48	6	3
" "	" do in Treasurers' hand....	0	1	11
1852.		£	s.	d.
Feb'y. 24	By Cash from Geo. Baker, Esq., late Treasurer.....	5	4	7
" "	" 7 Nos. "Agriculturist" sold at 2s. 6d.....	0	17	6
April 22	" Subscription from the United Townships of North Gower and Marlborough.....	24	5	0
" 27	" Subscription from Township of Fitzroy.....	24	0	0
Aug. 1	" Members Subscriptions, 1852	60	15	0
" 4	" Michael Riley's do	0	5	0
" "	" Alex. McLeans do	0	2	6
Sept. 18	" Wm. Bell's do	1	0	0
Oct. 19	" Government Grant for 1852.	250	0	0

Officers elected for the year 1853:—

WM. STEWART, Esq., *President.*  
 JOHN ROBERTSON, & } *Vice-Presidents.*  
 JOHN THOMPSON ESQs., }  
 GEO. R. BURKE, Esq., of Bytown *Sec. & Treas.*

*Directors.*

S. Davidson, B. Billings,  
 E. L. Woods, J. Graham,  
 W. Byers, C. Bradley and  
 G. Paterson, Esquires.

TOWNSHIP BRANCH SOCIETIES.

*Fitzroy Branch.*

The report of the Officers and Directors of the Fitzroy Branch of the County of Carlton Agricultural Society, for the year 1852.

Sheweth,

That for the year the Society was composed of Thirty-six members whose subscriptions amounted to £25, but the amount of subscriptions paid up amounted to only £24; that the sum of £55 was received from the Treasurer of the County Society for proportion of Government grant, that the sum of £53 15s. Od., was paid to Thirty-two competitors for Premiums. The receipts and disbursements for the year are exhibited per Statement C, showing a balance in the hands of the Treasurer amounting to £18 2s. 4d.

List of officers for the year 1853:—

ROBERT CARES, Esq., of Heebbell's Falls, *President.*

A. FORBES, Esq., of ditto, *Vice-President.*

A. RIDDELL, Esq., of ditto, *Treasurer.*

W. P. TAYLOR, Esq., Fitzroy Harbor, *Sec.*

1852.

Jan. 13.	To Balance	£1 2 8
May 1.	" Subscriptions	24 0 0
Oct. 20.	" Legislative Grant	55 0 0
	" 5 Copies Canadian	
	Agriculturist	0 14 6
		81 7 2

1852.

Jan. 13.	By G. King	£0 15 0
Sept. 30.	" Premiums paid	53 15 0
	" 25 Copies Canadian	
	Agriculturist	3 2 6
	" Tickets and Books	
	for Exhibition	0 5 0
	" Expenses examining	
	Crops	1 10 0
	" Expenses of Exhibi-	
	tion	2 8 9
	" Printing, Postages,	
	and Book	1 8 7
		63 4 9
		£18 2 4

*Huntly Branch.*

This Branch Society was formed the present year, and the declaration returned contains the names of 17 members, subscribing the sums of £17 10s.

JOHN GOURLAY, Esq., *President & Treasurer.*  
 WM. MONTGOMERY, Esq., *Secretary.*

*March Branch.*

There is no report from this Branch Society further than the declaration and the list of subscribers and officers. There are 48 members, subscribing together £26 5s.

THOS. MORGAN, *President.*  
 GEORGE MORGAN, *Vice-President.*  
 JOHN ARMSTRONG, *Treasurer.*

*Marlborough and North Gower Branch.*

This Branch Society has returned a list of the Premiums paid in 1852 &c., with an abstract of account as below:—

Amount received by North Gower and Marlborough Society for the year 1852.

*Cr.*

Amount received from Subscribers	- £24 5 0
" Government Grant	- 55 0 0
" John Griffitt	- - - 1 0 0

*Dr.*

Paid John Dixon for keeping Bull	- £12 11 4½
Paid for Printing Premiums	- - - 0 17 6
Paid Viewers of Crops	- - - 1 17 6
Postage	- - - 0 3 5
Paid J. Hill's Premiums for 1851	- 0 7 6
Paid for Premiums for 1851	- - - 38 16 3
	£54 13 6½

The subscription list returned for the present year contains 52 names subscribing £24 0s. Od.

List of officers for 1853:—

JAMES CRAIG, *President*, North Gower.  
 HUGH M'GOMERY, *Vice-President.*  
 G. E. JOHNSTON, *Secretary & Treasurer.*

*Directors:*

Joseph Blakely, James Brownlee,  
 John McTavish, Wm. Mackey,  
 Robt. Craig, sen., Robert Davis,  
 Robt. Brownlee, jr., James Kenada,  
 Alonson Burrows.

North Gower P. O.



# RULES AND REGULATIONS

OF THE

## EXHIBITION OF THE AGRICULTURAL ASSOCIATION OF U. C.,

TO BE HELD

IN THE CITY OF HAMILTON, OCTOBER 4, 5, 6, AND 7, 1853,

WITH THE

## LIST OF PRIZES.

### OFFICERS—1853.

#### *President :*

William Matthie, Esq., Brockville.

#### *1st Vice-President :*

C. P. Treadwell, Esq., L'Original.

#### *2nd Vice-President :*

David Christie, Esq., M.P.P., Brantford.

#### *Ex-Presidents :*

E. W. Thomson, Esq., Toronto.

Hon. Adam Fergusson, Woodhill.

H. Ruttan, Esq., Cobourg.

J. B. Marks, Esq., Kingston.

T. C. Street, Esq., M.P.P., Niagara Falls.

*Treasurer :* R. L. Denison, Esq., Toronto.

*Secretary :* George Buckland, Esq., Toronto.

*Consulting Chemist :* Professor Croft, University of Toronto.

*Seedsmen :* Mr. James Fleming, Toronto.

*Bankers :* Bank of Upper Canada.

#### THE BOARD OF AGRICULTURE,

Consisting of the following Members, constitutes the Council of the Association between the annual meetings thereof :—

E. W. Thomson, Esq., *Chairman*, Toronto.

Hon. Malcolm Cameron, Minister of Agriculture.

Wm. Matthie, Esq., President of the Agricultural Association.

Hon. Adam Fergusson, Woodhill.

Henry Ruttan, Esq., Cobourg.

R. L. Denison, Esq., Toronto.

David Christie, Esq., M.P.P., Brantford.

J. B. Marks, Esq., Kingston.

John Harland, Esq., Guelph.

George Buckland, Esq., *Secretary*, Toronto.

#### LOCAL COMMITTEE AT HAMILTON.

W. G. Kerr, Esq., Mayor, *Chairman*.

James Cummings, Esq., *Treasurer*.

Neh. Ford, Esq., *Secretary*.

Mr. Sheriff Thomas, President Mechanics' Institute.

James Hezlop, Esq., Warden of the United Counties of Wentworth and Halton.

Robert Hott, Esq., Mayor of Dundas.

Joseph Webster, Esq., Dundas, President Wentworth Agricultural Society.

Wm. Pring, Esq., President Horticultural Society.

James Wetenhall, Esq., Secretary and Treasurer of Wentworth Agricultural Society.

Michael Aikman, Esq., Reeve of Barton.

Dr. William Craigie, Hamilton.

Hutchison Clark, Esq., do.

Alexander Carpenter, Esq., do.

G. E. Cartwright, Esq., do.

T. N. Best, Esq., do.

#### RULES AND REGULATIONS.

Extract from the By-Laws of the Association :—

" The Members of the Agricultural Societies of the several Townships within the County or United Counties wherein the Annual Exhibition may be held, and the members of the Society of the said County or United Counties, shall be also members of the Association for that year, and have badges accordingly; provided the Agricultural Societies of the said Townships, or the Society of the said County or United Counties, shall devote their whole funds for the year, including the Government Grant, in aid of the Association; and that the Office-bearers of all County Societies shall have badges of free entrance during the Show."

1st. The payment of 5s. and upwards constitutes a person a member of the AGRICULTURAL ASSOCIATION OF UPPER CANADA for one year; and *Two Pounds Ten Shillings* for life, when given for that specific object, and not as a contribution to the local funds

2. No one but a member will be allowed to compete for prizes except in classes R, U, and W.

3. All Stock and Articles intended for Exhibition must be entered in the Secretary's Books at Hamilton, before 8 o'clock on *Tuesday evening, the 4th October*; if by letter the postage must be paid, and the person entering must remit 5s., being the amount of subscription constituting a member.

*Blood Horses and Thorough-bred Cattle* must be entered, and have their full Pedigrees properly attested and sent to the Secretary in Toronto, *not later than Saturday, Sept. 24th*. No animals will be al-

lowed to compete as *pure bred*, unless they possess regular Stud and Herd Book pedigrees, or satisfactory evidence produced that they are directly descended from such stock.

4th. Badges from the Treasurer's Office will be furnished Members, which will admit them free to every department of the Exhibition during the Show. Life Members admitted *free*.

5th. Tickets of admission to those who are not members, 7½d. each time of admission. Carriages, including drivers, 5s.; passengers to pay 7½d. each. Horsemen to pay 1s. 3d. each admission.

6th. Every article exhibited for competition must be the growth, produce, or manufacture of Canada, except Class W. Live Stock for breeding must be the property of persons residing in Canada. All premiums for articles, except Stock, entered in competition are to be awarded to the manufacturers or producers only.

7th. Discretionary Premiums will be awarded for such articles as may be considered worthy by the Judges, although not enumerated in the list, and the Directors will determine the amount of premium.

8th. In the absence of competition in any of the Classes, or if the Stock or Articles exhibited be of inferior quality, the Judges will exercise their discretion as to the value of the premiums they recommend.

9th. The Judges, Competitors, and Officers of the Association only will be permitted to enter the Show Grounds until two o'clock p.m. of Wednesday, October 5th, at which hour Members will be admitted. Non-members will be admitted on *Thursday morning* at 8 o'clock.

10th. No Articles or Stock exhibited will be allowed to be removed from the grounds till the awards are made, or without the permission of the President, under the penalty of losing the Premiums. An Auctioneer will be on the spot after the Premiums are announced, and every facility afforded for the transaction of business.

11th. Delegates, Judges, and Members of the Press, are requested and expected to report themselves at the Secretary's Office immediately on their arrival.

12th. The Judges to meet at the Secretary's Office on the Grounds, on *Wednesday morning*, to breakfast, at 8 o'clock precisely, to make arrangements for entering immediately upon their duties.

13th. It being essential to the satisfactory working of the Exhibition that all articles be entered and forwarded in reasonable time, all such as arrive on *Wednesday morning* and not previously entered, will be charged an entrance fee of 5s. each. *All entries will positively close on Wednesday morning at 9 o'clock.* Articles arriving afterwards will be admitted into the Show Grounds; but they will be entitled to compete only for *Discretionary Premiums*.

14th. Arrangements will be made for Agricultural Lectures or Discussions during the evenings of Wednesday and Thursday of the Show week.

15th. Every effort will be made for enabling the Treasurer to commence paying the Premiums *as early as possible*.

The Local Committee will make arrangements with Steamboat and Railway proprietors for the transit of visitors and articles for the Show at reduced rates; also with the Hotel and Boarding-house keepers for accommodating visitors at their ordinary fixed charges. Full particulars will be published hereafter.

## PRIZE LIST.

## CLASS A.—DURHAMS.

Best Bull	£7 0
2d do	4 0
3d do	2 10
4th do	1 10
Best 3 years old Bull	6 0
2d do	3 10
3d do	2 0
4th do	1 0
Best 2 years old Bull	4 10
2d do	3 0
3d do	1 15
4th do	1 0
Best 1 year old Bull	3 10
2d do	2 5
3d do	1 5
4th do	0 15
Best Bull Calf (under one year)	2 10
2d do	1 15
3d do	1 0
4th do	0 10
Best Cow	5 0
2d do	3 0
3d do	2 0
4th do	1 0
Best 3 years old Cow	4 0
2d do	2 10
3d do	1 10
4th do	0 15
Best 2 years old Heifer	3 0
2d do	2 0
3d do	1 0
4th do	0 15
Best 1 year old Heifer	2 15
2d do	1 10
3d do	1 0
4th do	0 10
Best Heifer Calf (under one year)	1 10
2d do	1 0
3d do	0 10
4th do	0 5

N.B.—A Certificate of HERD BOOK PEDIGREES will be required of all animals in the DURHAM Class. The Pedigrees of others should be as full and correct as possible. The *Breeders* of Premium Stock will have *Diplomas* awarded them, when their names and residence are inserted in the Certificate.

## CLASS B.—DEVONS.

Best Bull	£7 0
2d do	4 0
3d do	2 10
Best 2 years old Bull	4 10
2d do	3 0
3d do	1 15
Best 1 year old Bull	3 10
2d do	2 5
3d do	1 5
Best Bull Calf (under one year)	2 10
2d do	1 15
3d do	1 0
Best Cow	5 0
2d do	3 0
3d do	2 0
Best 2 years old Heifer	3 0
2d do	2 0
3d do	1 0



Best 1 year old Heifer	2 10
2d do	1 10
3d do	1 0
Best Heifer Calf (under one year)	1 10
2d do	1 0
3d do	0 10

## CLASS C.—HEREFORDS.

Best Bull	£7 0
2d do	4 0
3d do	2 10
Best 2 years old Bull	4 10
2d do	3 0
3d do	1 15
Best 1 year old Bull	3 10
2d do	2 5
3d do	1 5
Best Bull Calf (under one year)	2 10
2d do	1 15
3d do	1 0
Best Cow	5 0
2d do	3 0
3d do	2 0
Best 2 years old Heifer	3 0
2d do	2 0
3d do	1 0
Best 1 year old Heifer	2 10
2d do	1 10
3d do	1 0
Best Heifer Calf (under one year)	1 10
2d do	1 0
3d do	0 10

## CLASS D.—AYRSHIRES.

Best Bull	£7 0
2d do	4 0
3d do	2 10
Best 2 years old Bull	4 10
2d do	3 0
3d do	1 15
Best 1 year old Bull	3 10
2d do	2 5
3d do	1 5
Best Bull Calf (under one year)	2 10
2d do	1 15
3d do	1 0
Best Cow	5 0
2d do	3 0
3d do	2 0
Best 2 years old Heifer	3 0
2d do	2 0
3d do	1 0
Best 1 year old Heifer	2 10
2d do	1 10
3d do	1 0
Best Heifer Calf (under one year)	1 10
2d do	1 0
3d do	0 10

N.B.—The preceding Prizes are also offered to GALLOWAY CATTLE; and all other Breeds will receive encouragement, according to their merits.

## CLASS E. 1.—GRADE CATTLE.

Best Cow	£5 0
2d do	3 0
3d do	2 0
Best 3 year old Cow	4 0
2d do	2 10
3d do	1 10
Best 2 year old Heifer	3 0
2d do	2 0
3d do	1 0
Best 1 year old Heifer	2 10
2d do	1 10
3d do	1 0

Best Heifer Calf (under one year)	1 10
2d do	1 0
3d do	0 10

A certificate to be produced to show the breeding of animals in Class E. 1.

## CLASS E. 2.—FAT CATTLE, ANY BREED.

Best Ox or Steer	£6 0
2d do	4 0
3d do	2 0
Best Cow or Heifer	6 0
2d do	4 0
3d do	2 0
Best Yoke of Working Oxen	3 0
2d do	2 0
3d do	1 0

No animal entitled to compete for a Premium in more than one of the foregoing classes.

## HORSES.

## MR. STREET'S PRIZE FOR A STALLION.

T. C. STREET, Esq., M.P.P., late President of the Association, anxious to improve the breed of good Horses in this section of the Province, offers a Prize of £20 to the Horse which shall, by Judges appointed by the Association for the purpose, be pronounced the best, and which shall answer the following description:—Fully 16 hands high; well topped; round in the barrel and deep in the chest; he must have weight in proportion to his size, and be a good traveller—such a Horse as would be likely to produce a breed of good Carriage Horses, in which this country seems deficient. Such a Horse must be owned in Canada, and have stood an entire season in some part of this section of the Province. The Horse which won a similar prize given by Mr. Street last year will not be eligible this year. Competitors for this prize will not be ineligible to compete for the usual premiums offered by the Society.

## CLASS F.—BLOOD HORSES.

Best thorough bred Stallion	£7 10
2d do	5 0
3d do	2 10
Best thorough bred 3 year old Stallion	5 0
2d do	3 0
3d do	1 0
Best thorough bred 3 year old Filly	4 0
2d do	2 10
3d do	1 0
Best thorough bred 2 year old Filly	3 0
2d do	2 0
3d do	1 0
Best thorough bred Mare and Foal	5 0
2d do	3 0
3d do	1 0

Pedigree to be produced.

## CLASS G.—AGRICULTURAL HORSES.

Best Stallion for Agricultural purposes	£7 10
2d do	5 0
3d do	2 10
Best Heavy Draught Stallion	7 10
2d do	5 0
3d do	2 10
Best 3 year old Stallion	5 0
2d do	3 0
3d do	1 0

Best 2 year old Stallion	3 0
2nd do	2 0
3rd do	1 0
Best 3 year old Filly	4 0
2d do	2 10
3d do	1 0
Best 2 year old Filly	3 0
2d do	2 0
3d do	1 0
Best Span Matched Carriage Horses	4 0
2d do	3 0
3d do	1 0
Best Span of Draught Horses	4 0
2d do	3 0
3d do	1 0
Best Brood Mare and Foal, or evidence that the foal has been lost	5 0
2d do	3 0
3d do	1 0
Best Saddle Horse	2 0
2d do	1 10
3d do	1 0

CLASS H.—SHEEP.  
*Leicesters.*

Best Ram, two shears and over	£4 0
2d do	2 0
3d do	1 0
Best shearling Ram	2 10
2d do	1 10
3d do	0 15
Best Ram Lamb	2 0
2d do	1 0
3d do	0 10
Best 2 Ewes, two shears and over	4 0
2d do	3 0
3d do	1 10
Best 2 shearling Ewes	3 0
2d do	2 0
3d do	1 0
Best 2 Ewe Lambs	1 10
2d do	1 0
3d do	0 10

*Southdowns.*

Best Ram, two shears and over	4 0
2d do	2 0
3d do	1 0
Best shearling Ram	2 10
2d do	1 0
3d do	0 15
Best Ram Lamb	2 0
2d do	1 0
3d do	0 10
Best 2 Ewes, two shears and over	4 0
2d do	3 0
3d do	1 0
Best 2 shearling Ewes	3 0
2d do	2 0
3d do	1 0
Best 2 Ewe Lambs	1 10
2d do	1 0
3d do	0 10

*Merinos and Saxons.*

Best Ram, two shears and over	4 0
2d do	2 0
3d do	1 0
Best shearling Ram	2 10
2d do	1 10
3d do	0 15
Best Ram Lamb	2 0
2d do	1 0
3d do	0 10
Best 2 Ewes, two shears and over	4 0
2d do	3 0
3d do	1 10

Best 2 shearling Ewes	3 0
2d do	2 0
3d do	1 0
Best 2 Ewe Lambs	1 10
2d do	1 0
3d do	0 10
<i>Fat Sheep.</i>	
Best two Fat Wethers	3 0
2d do	2 0
3d do	1 0
Best 2 Fat Ewes	3 0
2d do	2 0
3d do	1 0

CLASS I.—PIGS.

*Large Breed.*

Best Boar, 1 year and over	3 0
2d do	2 0
3d do	1 0
Best Breeding Sow, 1 year and over	3 0
2d do	2 0
3d do	1 0
Best Boar of 1853	2 0
2d do	1 10
3d do	1 0
Best Sow of 1853	2 0
2d do	1 10
3d do	1 0

*Small Breed.*

Best Boar, 1 year and over	3 0
2d do	2 0
3d do	1 0
Best Breeding Sow, 1 year and over	3 0
2d do	3 0
3d do	1 0
Best Boar of 1853	2 0
2d do	1 10
3d do	1 0
Best Sow of 1853	2 0
2d do	1 10
3d do	1 0

In this class the precise age of the animals is to be stated on the cards.

CLASS J.—POULTRY.

Best pair of Dorkings	10 0
2nd do.	5 0
Best pair of Polands	10 0
2nd do.	5 0
Best pair Large Breed Fowls	10 0
2nd do.	5 0
Best pair of Jersey Blues	10 0
2nd do	5 0
Best pair of Cochins, China, Malay or Chittagong Fowls	10 0
2nd do	5 0
Best pair of Bantams	10 0
2nd do	5 0
Best pair of Turkeys [White and Colored]	10 0
2nd do	5 0
Best pair of large Geese	10 0
2nd do	5 0
Best pair of Muscovy Ducks	10 0
2nd do	5 0
Best pair of common Ducks	10 0
2nd do	5 0
Best pair of Guinea Fowls	10 0
2nd do	5 0
Best collection of Pigeons	10 0
2nd do	5 0
Best lot of poultry owned by Exhibitor	1 0 0



## CLASS K.—AGRICULTURAL PRODUCTIONS.

*The Canada Company's Prize of £25 0*

For the best 25 Bushels of *Fall Wheat*, the produce of Canada West, being the growth of the year 1853. The prize to be awarded to the actual grower only of the Wheat, which is to be given up to and become the property of this Association, for distribution to the County Societies for seed.

2d	do	[by the Association]	10 0
3d	do		5 0

The winners of the 2nd and 3rd premiums will retain the wheat. Exhibitors in this class will be required to state the nature of the soil, mode of preparation, time of sowing, amount of produce per acre, and the kind and quantity of manure applied. Exhibitors in this class will not be allowed to compete for premiums offered for wheat consisting of two bushels.

Best 2 bushels of Winter Wheat	£2 10
2d do	1 15
3d do	1 5
Best 2 bushels Spring Wheat	2 10
2d do	1 15
3d do	1 5
Best 2 bushels Barley	1 10
2d do	1 0
3d do	0 10
Best 2 bushels Rye	1 10
2d do	1 0
3d do	0 10
Best 2 bushels of Oats	1 10
2d do	1 0
3d do	0 10
Best 2 bushels of Peas	1 10
2d do	1 0
3d do	0 10
Best 2 bushels of Marrowfat Peas	1 10
2d do	1 0
3d do	0 10
Best 2 bushels Indian Corn in the ear	1 10
2d do	1 0
3d do	0 10
Best bushel of Timothy Seed	1 5
2d do	0 15
3d do	0 10
Best 2 bushels of Clover Seed	2 0
2d do	1 10
3d do	1 0
Best Bushel Hemp Seed	1 0
2d do	0 15
3d do	0 10
Best bushel Flax Seed	1 10
2d do	1 0
3d do	0 10
Best bushel Mustard Seed	1 0
2d do	0 15
3d do	0 10
Best Swedish Turnip Seed, from transplanted bulbs, not less than 20 lbs.	1 10
2d do	1 0
3d do	0 10
Best bale of Hops, not less than 112 lbs.	2 10
2d do	1 10
3d do	1 0
Best bushel Potatoes	0 15
2d do	0 10
3d do	0 5
Best Bushel Swede Turnips	0 15
2d do	0 10
3d do	0 5
Best Bushel White Globe Turnips	0 15
2d do	0 10
3d do	0 5

Best Bushel Aberdeen Yellow Turnips	0 15
2d do	0 10
3d do	0 5
Best bushel Red Carrots	0 15
2d do	0 10
3d do	0 5
Best bushel White or Belgian Carrots	0 15
2d do	0 10
3d do	0 5
Best bushel Mangel Wurzel [Long-red]	0 15
2d do	0 10
3d do	0 5
Best bushel Yellow Globe Mangel Wurzel	0 15
2d do	0 10
3d do	0 5
Best 12 Roots of Khol Rabi	0 10
2d do	0 5
Best bushel of Sugar Beet	0 15
2d do	0 10
3d do	0 5
Best Bushel of Parsnips	0 15
2d do	0 10
3d do	0 5
Best 4 largest Squash for Cattle	0 15
2d do	0 10
3d do	0 5
Best 20 lbs. manufactured Tobacco, growth of Canada West	1 0
2d do	0 10
Best Broom Corn Brush, 28 lbs.	1 0
2d do	0 15
3d do	0 10
Best 2 Pumpkins	0 10
2d do	7s. 6d.
3d do	0 5
Best Peck of White Beans	0 10
2d do	7s. 6d.
3d do	5 0

*The Canada Company's Prize for Flax.*

Best 112 lbs. of Flax	26 0
2d do [by the Association]	3 10
3d do	1 10

*The Canada Company's Prize for Hemp.*

Best 112 lbs. of Hemp	4 0
2d do [by the Association]	2 10
3d do	1 0

## CLASS L.—HORTICULTURAL PRODUCTS.

Best 20 varieties of Apples, named (six of each)	20 15 0
2d do	10 0
3d do	5 0
Best 12 Table Apples, named [Fall sort]	10 0
2d do	7 6
3d do	5 0
Best 12 Table Apples, named [Winter sort]	10 0
2d do	7 6
3d do	5 0
Best 12 Baking Apples, named	10 0
2d do	7 0
3d do	5 0
Best 20 variety of Pears, named [six of each]	15 0
2d do	10 0
3d do	5 0
Best 12 Table Pears, named [Fall sort]	10 0
2d do	7 6
3d do	5 0
Best 12 Table Pears, named [Winter sort]	10 0
2d do	7 6
3d do	5 0
Best dozen Plums [Dessert] named	10 0
2d do	7 6
3d do	5 0

Best 12 baking Plums, named	10 0	Best Peck of Yellow Onions	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
Best quart of Damsons [English]	10 0	Best Peck of Red Onions	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
Best 12 Peaches, grown in hot house,	10 0	Best half-bushel White Turnips, Table	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
Best 12 Peaches grown in open air, named	10 0	Best 12 Early Horn Carrots	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
Best 20 varieties of Peaches grown in open air	15 0	Best dozen Dahlias, named	10 0
2d do	10 0	2d do	7 0
3d do	5 0	3d do	5 0
Best 12 Quinces	10 0	Best Bouquet of Cut Flowers	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
Best 4 clusters of Grapes, [hot house]	10 0	Best collection of Green House Plants, not less than twelve specimens	£1 0 0
2d do	7 6	2d do	15 0
3d do	5 0	3d do	10 0
Best 4 clusters Black Hamburgh [hot house]	10 0	Best collection of Annuals in bloom	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
Best 4 clusters Black Grapes, grown in open air	10 0	Best Floral Ornament	£1 0 0
2d do	7 6	2d do	15 0
3d do	5 0	3d do	10 0
Best 4 clusters white Grapes grown in open air	10 0	Best Bouquet	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
Best 4 clusters Grapes, of any others sorts,	10 0	Best Canada Coffee, 12 lbs.	10 0
2d do	7 6	2d do	5 0
3d do	5 0	Best Water Melon	10 0
Best 4 Squashes, for Table	10 0	2d do	7 6
2d do	7 6	3d do	5 0
3d do	5 0	Best Musk Melon of any sort	10 0
Best 12 Tomatoes	10 0	2d do	7 6
2d do	7 6	3d do	5 0
3d do	5 0	Best and largest collection of Dahlias	1 0 0
Best 12 roots of Salsify,	10 0	2d do	10 0
2d do	7 6	3d do	7 6
3d do	5 0	Best collection of Verbenas, not less than 12 varieties	15 0
Best 4 heads Brocoli	10 0	2d do	10 0
2d do	7 6	3d do	5 0
3d do	5 0	Best and greatest variety of Green House Plants	1 0 0
Best 4 heads Cauliflower	10 0	2d do	10 0
2d do	7 6	3d do	7 6
3d do	5 0	Best Collection of Native Plants, dried and named	1 10 0
Best 4 heads Cabbage (Summer)	10 0	2d do	1 0 0
2d do	7 6	3d do	10 0
3d do	5 0	Best and greatest variety of Vegetables	10 0
Best 4 heads Cabbage [Winter]	10 0	2d do	7 6
2d do	7 6	3d do	5 0
3d do	5 0	Best and heaviest 2 bunches of Grapes	10 0
Best 12 Carrots for Table	10 0	2d do	7 6
2d do	7 6	3d do	5 0
3d do	5 0	Best 20 Roots of Chicory	10 0
Best 12 roots of White Celery	10 0	2d do	7 6
2d do	7 6	Best 20 lbs. of Chicory, manufactured from roots grown in the Province this season	1 0 0
3d do	5 0	2d do	10 0
Best 12 roots Red Celery	10 0		
2d do	7 6		
3d do	5 0		
Best dozen Capiscums	10 0		
2d do	7 6		
3d do	5 0		
Best 6 Egg Plants, purple	10 0		
2d do	7 6		
3d do	5 0		
Best 12 Blood Beets	10 0		
2d do	7 6		
3d do	5 0		
Best Peck of White Onions	10 0		
2d do	7 6		
3d do	5 0		

## CLASS M.—AGRICULTURAL IMPLEMENTS.

Best Wooden Plough	£2 0
2d do	1 10
3d do	1 0
Best Iron Plough	2 0
2d do	1 10
3d do	1 0
Best Subsoil Plough	2 0
2d do	1 10
3d do	1 0



Best pair of Harrows	1 0	Best set of Horse Shoes	0 15
2d do	0 15	2d do	0 10
3d do	0 10	3d do	0 5
Best Fanning Mill	1 10	Best half-dozen Hay Rakes	0 10
2d do	1 0	2d do	0 7
3d do	0 10	2d do	0 5
Best Horse-power Thrasher and Separator	5 0	Best half-dozen narrow Axes	0 15
2d do	3 0	2d do	0 10
3d do	2 0	3d do	0 5
Best Grain Drill	3 0	Best half-dozen Manure Forks	0 15
2d do	2 0	2d do	0 10
3d do	1 0	3d do	0 5
Best Seed Drill or Barrow	1 0	Best half-dozen Hay Forks	0 15
2d do	0 15	2d do	0 10
3d do	0 10	3d do	0 5
Best Straw Cutter	1 0	Best half-dozen Scythe Snaths	0 15
2d do	0 15	2d do	0 10
3d do	0 10	3d do	0 5
Best Smt Machine	1 10	Best Ox Yoke and Bows	0 15
2d do	0 15	2d do	0 10
Best Portable Grist Mill	3 0	Best Grain Cradle	0 10
2d do	2 0	2d do	0 5
3d do	1 0	Best half-dozen Grain Shovels, wood	0 15
Best Grain Cracker	2 0	2d do	0 10
2d do	1 10	3d do	0 5
3d do	1 0	Best half-dozen Iron Shovels	0 15
Best Corn and Cob Crusher	1 0	2d do	0 10
2d do	0 15	3d do	0 5
3d do	0 10		
Best Machine for cutting Roots for Stock	1 10		
2d do	1 0		
3d do	0 10		
Best Clover Cutting Machine	2 0		
2d do	1 5		
2d do	0 10		
Best Clover Cleaning Machine	3 0		
2d do	2 0		
3d do	1 0		
Best two-horse Waggon	3 0		
2d do	2 0		
3d do	1 0		
Best Horse Cart	1 10		
2d do	1 0		
3d do	0 10		
Best Horse Rake	1 0		
2d do	0 15		
3d do	0 10		
Best Metal Roller	2 15		
2d do	2 0		
Best Wooden Roller	2 10		
2d do	1 5		
Best Reaping Machine	5 0		
2d do	3 0		
3d do	2 0		
Best Stump Extractor	2 0		
2d do	1 0		
3d do	0 10		
Best Mowing Machine	5 0		
2d do	3 0		
3d do	2 0		
Best Potato Digger	0 15		
2d do	0 10		
3d do	0 5		
Best Thistle Extractor	0 10		
2d do	0 5		
Best Farm Gate	0 15		
2d do	0 10		
3d do	0 5		
Best Cultivator	1 10		
2d do	1 0		
3d do	0 10		
Best Machine for making Drain Tiles	2 10		
2d do	1 10		
Best Brick-making Machine	2 10		
2d do	1 10		
		CLASS N.—DAIRY PRODUCTS, SUGAR, &c.	
		Best Firkin of Butter, not less than 56 lbs.	£2 10
		2d do	1 10
		3d do	1 0
		Best Cheese, not less than 30 lbs.	2 10
		2d do	1 10
		3d do	1 0
		Best 2 Stilton Cheese, not less than 14 lbs. each	2 10
		2d do	1 10
		3d do	1 0
		The Cheese in both cases to be the make of	
		1853.	
		Best Butter, not less than 20lbs., in Firkins,	
		Crocks, or Tabs	1 10
		2d do	1 0
		3d do	0 10
		Best 30 lbs. Maple Sugar	1 0
		2d do	0 10
		3d do	0 5
		Best 30 lbs. Beet Root Sugar	1 0
		2d do	0 10
		3d do	0 5
		Best 20 lbs. Corn Stalk Sugar	0 15
		2d do	0 10
		3d do	0 5
		Best Sugar made by Indians	0 15
		2d do	0 10
		3d do	0 5
		Best Starch	0 15
		2d do	0 10
		Best Soaps [collection assorted]	0 15
		2d do	0 10
		Best Candles [collection]	0 15
		2d do	0 10
		Best collection of Bottled Fruits	15 0
		2d do	10 0
		3d do	5 0
		Best 6 kinds of Preserves	15 0
		2d do	10 0
		3d do	5 0
		Best collection of Confectionery	1 10 0
		2d do	1 0 0
		3d do	10 0

## CLASS O 1.—DOMESTIC MANUFACTURES.

*Leather and Furs.*

Best Saddle and Bridle	£1 0
2d do	0 15
Best Side Saddle	1 0
2d do	0 15
Best Specimen of Whips and Whip Thongs (collection assorted)	1 10
2d do	0 15
Best 3 Hogskins	1 0
2d do	0 10
Best set of Farm Harness	1 10
2d do	1 0
3d do	0 10
Best set of Pleasure Harness	1 10
2d do	1 0
3d do	0 10
Best Travelling Trunk	1 10
2d do	0 10
3d do	0 5
Best Side of Sole Leather	0 15
2d do	0 10
3d do	0 5
Best Skirting Leather	0 15
2d do	0 10
3d do	0 5
Best Side of Harness Leather	0 15
2d do	0 10
3d do	0 5
Best Calf Skin, Dressed	0 15
2d do	0 10
3d do	0 5
Best Skin of Leather for Carriage Covers	1 0
2d do	0 10
Best Fur Hat	0 15
2d do	0 10
3d do	0 5
Best Fur Cap	0 15
2d do	0 10
3d do	0 5
Best Fur Sleigh Robe	0 15
2d do	0 10
3d do	0 5
Best Specimen Bootmaker's Work	0 15
2d do	0 10
3d do	0 5

## O. 2.—MANUFACTURES IN METALS, &amp;c.

Best Portable Steam Engine, [open to foreign competition,] Diploma and	£5 0
Best Model in metal of Engine, general millwright's work or machinery, Diploma and	2 0
2d do	1 0
Best specimen of Silversmith's work, Diploma and	2 0
Do Ornamental Iron-work from the hammer, Diploma and	1 10
Do Cast Ornamental Iron-work, Diploma and	1 10
Do Copper-smith's work, Diploma and	1 0
Do Locksmith's work, Diploma and	1 0
Do Pump-maker's work, Diploma and	1 0
Best Iron Fire-proof Vault Door [price considered,] Diploma and	2 0
Best Iron Fire-proof Safe, [price considered,] Diploma and	1 10
Best Refrigerator [price considered,] Diploma and	1 0
Best Hall Stove	1 0
2d do	0 10
3d do	0 5

Best Parlour Stove	1 0
2d do	0 10
3d do	0 5
Best system of Ventilating building, with model and description, and reducing the same to practical use, Diploma and	5 0
2d do	2 10
[The Judges on Stoves are especially requested to pay particular attention to the ventilation which may be secured by the Stoves on Exhibition.]	
Best specimen of Iron Casting for Stoves and general Machinery, Diploma	
Best Balance Scales	1 0
2d do	0 15
3rd do	0 5
Best Model Hot Air Apparatus	1 10
2d do	0 15
Best Steaming Apparatus for Feeding Stock	1 10
2d do	0 15
Best set of Cooper's Tools	0 15
2d do	0 10
Best set of Bench Planes	0 15
2d do	0 10
Best pair of Hames	0 10
2d do	0 5
Best Saddle tree	0 10
2d do	0 5
Best Weaver's Reeds	0 10
2d do	0 5
Best Augurs from $\frac{1}{2}$ to 2 inches	0 10
2d do	0 5
Best Earth Augur	0 10
2d do	0 5
Best specimen 2½ lbs. Cut Nails	0 10
2d do	0 5
Best Blacksmith's Bellows	1 5
2d do	0 15
Best Rifle	0 15
2d do	0 10

## CLASS P.—CABINET WARE, CARRIAGES, &amp;c.

Best side Board	£3 0
2nd do	2 0
3rd do	1 0
Best Veneers from Canadian Wood	1 0
2nd do	15
3rd do	0 10
Best specimen of Sawed Pine	0 10
do Black Walnut	0 10
do Oak	0 10
do Curled Maple	0 10
In planks not less than 6 feet long, 12 inches wide and 2 inches thick, one side plain [not varnished] the other rough.	
Best specimen of graining wood	1 10
2nd do	1 0
3rd do	10
Best Centre Table	1 0
2nd do	0 15
3rd do	10
Best Dining Table	1 0
2nd do	0 15
3rd do	0 10
Best Easy Arm Chair	0 15
2nd do	0 10
3rd do	0 5
Best Sofa	3 0
2nd do	1 10
3rd do	1 0
Best 6 Dining Room Chairs	1 5
2nd do	1 0
3rd do	0 15



Best Ottoman	1 0	Best piece Winter Tweed, 12 yards,	1 0
2nd do	0 15	2d do	0 15
3rd do	0 10	3d do	0 10
Best Work Box	0 10	Best piece Fulled Cloth, 10 yards not factory made,	0 15
2nd do	0 5	2d do	0 10
Best Writing Desk	0 10	3d do	0 5
2nd do	0 5	Best Shawls, not factory made,	0 15
Best 1 Horse Pleasure Carriage	2 0	2d do	0 10
2nd do	1 10	3d do	0 5
3rd do	0 10	Best piece Linen Goods,	0 15
Best 2 Horse Pleasure Carriage	2 0	2d do	0 10
2nd do	1 10	3d do	0 5
3rd do	0 15	Best samples of Flax or Hemp Cordage, not less than 28lbs.	0 15
Best half-dozen Corn Brooms	£3 10 0	2d do	0 10
2nd do	0 5 0	3d do	0 5
Best dozen Broom Handles turned,	0 10 0	12 best Linen Bags manufactured from Flax growth of Canada,	1 0
2nd do	0 5 0	2d do	0 15
Best specimen Willow Ware	0 10 0	3d do	0 10
2nd do	0 5 0		
Best dozen Flour barrels	1 0 0		
2nd do	0 10 0		
Best Wooden Pail	0 5 0		
2nd do	0 3 9		
Best Wash Tub	0 7 6		
2nd do	0 5 0		
Best Washing Machine	0 10 0		
2nd do	0 5 0		
Best Board Rule	0 10 0		
2nd do	0 5 0		
Best Spinning Wheel	0 10 0		
2nd do	0 5 0		
Best dozen Wheel Heads	0 15 0		
2nd do	0 10 0		
Best Churn	0 15 0		
2nd do	0 10 0		
Best 4 or 6 Pannelled Door	0 15 0		
2nd do	0 10 0		
3rd do	0 5 0		
Best Window Sash, 12 lights, hung in frame	0 15 0		
2nd do	0 10 0		
3rd do	0 5 0		
Best Model Beehive	0 10 0		
2nd do	0 5 0		
Best Bundle Shingles sawed	0 10 0		
2nd do do	0 5 0		
Best do do split	0 10 0		
2nd do do	0 5 0		

## CLASS Q.—WOOLEN AND FLAX GOODS.

Best piece of no less than 12 yards of Woolen Carpet,	£2 0
2d do	1 0
3d do	0 10
Best 12 yards, or over, Oil Cloth,	1 0
2d do	0 10
3d do	0 5
Best pair of Wollen Blankets,	2 0
2d do	1 0
3d do	0 10
Best Counterpane,	1 0
2d do	0 15
3d do	0 10
Best piece 12 yards Flannel,	1 0
2d do	0 15
3d do	0 10
Best piece Satinet, 12 yards,	1 0
d do	0 15
3d do	0 10
Best piece Broad Cloth, from Canadian Wool,	2 0
2d do	1 0
3d do	0 10
Best piece Flannel, 10 yares, not factory made,	0 15
2d do	0 10
3d do	0 5

## CLASS R.—LADIES' DEPARTMENT.

Best Specimen of Crochet Work.....	£1 0 0
2d do.....	15 0
3d do.....	10 0
Best specimen of Faney Netting.....	15 0
2d do.....	10 0
3d do.....	7 6
Best specimen of Fancy Knitting.....	15 0
2d do.....	10 0
3d do.....	7 6
Best Embroidery, in Muslin.....	15 0
2d do.....	10 0
3d do.....	7 6
Best Embroidery, in Silk.....	15 0
2d do.....	10 0
3d do.....	7 6
Best Embroidery, in Woosted.....	15 0
2d do.....	10 0
3d do.....	7 6
Best specimen of Worsted Work.....	15 0
2d do.....	10 0
3d do.....	7 6
Best specimen of Raised Worsted Work...	15 0
2d do.....	10 0
3d do.....	7 6
Best specimen of Quilts, in Crotchet.....	1 0 0
2d do.....	15 0
3d do.....	10 0
Do in Knitting.....	1 0 0
2d do.....	15 0
3d do.....	10 0
Do in Silk.....	1 0 0
2d do.....	15 0
3d do.....	10 0
Best specimen in Totting.....	15 0
2d do.....	10 0
3d do.....	7 6
Best specimen in Braiding.....	15 0
2d do.....	10 0
3d do.....	7 6
Best specimen of Wax Fruit.....	15 0
2d do.....	10 0
3d do.....	5 0
Best specimen of Wax Flowers.....	15 0
2d do.....	10 0
3d do.....	5 0
Best Pair Woolen Socks.....	15 0
2d do.....	7 6
3d do.....	5 0
Best pair of Woolen Stockings.....	10 6
2nd do.....	7 0
3rd do.....	5 0
Best specimen of Gentlemen's shirts.....	15 0
2d do.....	10 0

3d do.....	5 0
Best pair Woolen Mittens.....	10 0
2d do.....	7 6
3d do.....	5 0
Best pair Woolen Gloves.....	10 0
2d do.....	7 6
3d do.....	5 0
Best Hat of Canadian Straw.....	10 0
2d do.....	7 6
3d do.....	5 0
Best Bonnet of Canadian Straw.....	10 0
2d do.....	7 6
3d do.....	5 0

## CLASS S.—FINE ARTS, &amp;C.

## Oil.

	Professional List.	Amateur List.
Historical painting, Canadian subject, Diploma and.....	£3 0	£2 10
2d best.....	2 0	2 0
Landscape, Canadian subject, Diploma and.....	3 0	2 10
2d best.....	2 10	1 10
Animals [grouped or single] Diploma and.....	3 0	2 10
2d best.....	2 0	1 10
Portrait—Diploma and.....	2 10	2 0
2d best.....	1 10	1 0

## In Water Colours.

Landscape, Canadian subject, Dip. & 2d best.....	2 10	2 0
Portrait, Diploma and.....	2 0	1 10
2d best.....	1 0	1 0
Animals, [grouped or single] Dip. & 2d best.....	2 10	2 0
Miniature, Diploma and.....	2 0	1 10
2d best.....	1 10	1 0
Flowers, Diploma and.....	1 10	1 0
2d best.....	1 0	0 15

## Pencil and Crayon.

Pencil Portrait, Diploma and.....	1 10	1 0
2d best.....	1 0	0 15
Crayon Portrait, Diploma and.....	1 10	1 0
2d best.....	1 0	0 15
Pencil Drawing, Diploma and.....	1 10	1 0
2d best.....	1 0	0 15
Crayon Drawing, Diploma and.....	1 10	1 0
2d best.....	1 0	0 15
Colored Crayon, Diploma and.....	1 10	1 0
2d best.....	1 0	0 10
Best specimen of Colored Geometrical drawing of Engine or Millwright work. Diploma.....	2 0	
Daguerreotype, best collection, the exhibitor to have operated in Canada for the last 12 months, Diploma and.....	1 10	
2d best.....	1 0	
Lithographic drawing unprinted, Diploma and.....	1 10	
2d best.....	1 0	
Wood engraving, Diploma and.....	1 10	
2d best.....	1 0	
Engraving on Copper, Diploma and.....	1 10	
2d best.....	1 0	
Engraving on Steel, Diploma and.....	1 10	
2d best.....	1 0	
Best specimen of Seal Engraving, Diploma and.....	2 0	
Do. do. Carving in Wood, Diploma &.....	2 0	
Do. do. do. Stone, Diploma &.....	2 0	
Do. Modelling in Plaster, Diploma &.....	2 0	
Do. Ornamental Turning, Diploma &.....	1 0	
Ornamental Writing, Diploma and.....	1 0	
2d best.....	0 10	
Stuffed Birds.....	1 0	
2d do.....	0 10	

Picture Frame, gilt.....	1 0
2d do.....	0 10
Picture Frame, veneered.....	1 0
2d best.....	0 10
Stucco Moulding.....	1 0
2d do.....	0 10
Stained Glass.....	1 0
3d do.....	0 10
Dentistry, Diplom and.....	1 0
2d do.....	0 10

All articles exhibited by *Ladies* to be admitted *free*.  
All articles entitled to premiums must have been executed *since the last Exhibition* of this Association.

## CLASS T.—BOOKBINDING, PAPER, &amp;C.

Best specimen Bookbinding.....	£1 0
2d do.....	0 15
3d do.....	0 10
Best ream of Writing Paper.....	1 0
2d do.....	0 15
3d do.....	0 10
Best ream of Printing Paper.....	1 0
2d do.....	0 15
3d do.....	0 10
Best specimen Letter-Press Printing, executed since last Exhibition.....	2 10
2d do.....	1 10
3d do.....	1 0

## CLASS U.—INDIAN PRIZES.

Best Bark Canoe.....	£1 10
2nd do.....	0 10
Best 4 Paddles.....	0 15
2nd do.....	0 5
Best Indian Cradle.....	0 15
2nd do.....	0 10
Best pair Snow Shoes, [common size].....	0 15
2nd do.....	0 10
Best pair Snow Shoes, [8 inches long].....	0 10
2nd do.....	0 5
Best Tobacco Pouch worked with Porcupine Quills.....	0 5
Best pipe of Peace.....	0 15
2nd do.....	0 10
Best pipe of War.....	0 15
2nd do.....	0 10
Best pair of Moccasins [plain].....	0 5
2nd do.....	0 3
Best pair Moccasins [worked with Porcupine Quills].....	0 7
2nd do.....	0 5
Best pair Moccasins [worked with Beads].....	0 7
2nd do.....	0 5
Best Fruit Basket.....	0 7
2nd do.....	0 5
Best Clothes Basket.....	0 7
2nd do.....	0 5
Best Hand Basket.....	0 7
2nd do.....	0 5

All articles exhibited by Indians admitted *free*.

## CLASS V.—POTTERY.

Best specimen of Pottery.....	£1 0
2d do.....	0 15
3d do.....	0 10
Best specimen Draining Tile.....	2 10
2d do.....	1 0
3d do.....	0 10
Best dozen Bricks.....	0 10
2d do.....	0 5
Best Water Filter.....	0 15
2d do.....	0 5



## CLASS W.—FOREIGN STOCK AND IMPLEMENTS.

Premiums for Stock and Implements belonging to persons residing out of Canada. Exhibitors of this class are admitted *free of any charge*.

Best Durham Bull not over five years.....	Diploma and	£2 10
2d do .....	2 10	
Best Durham Cow.....	Diploma and	1 10
2d do .....	1 10	
Best Ayrshire Bull.....	Diploma and	2 10
2d do .....	2 10	
Best Ayrshire Cow.....	Diploma and	1 10
2d do .....	1 10	
Best Hereford Bull.....	Diploma and	2 10
2d do .....	2 10	
Best Hereford Cow.....	Diploma and	1 10
2d do .....	1 10	
Best Devon Bull.....	Diploma and	2 10
2d do .....	2 10	
Best Devon Cow.....	Diploma and	1 10
2d do .....	1 10	
Best Stallion for Agricultural purposes,		
2d do .....	Diploma and	3 0
Best Blood Stallion.....	Diploma and	3 0
2d do .....	3 0	
Best Leicester Ram.....	Diploma and	1 10
2d do .....	1 10	
Best two Leicester Ewes.....	Diploma and	1 10
2d do .....	1 0	
Best Southdown Ram.....	Diploma and	1 10
2d do .....	1 0	
Best two Southdown Ewes.....	Diploma and	1 10
2d do .....	1 0	
Best Merino and Saxon Ram.....	Diploma and	1 10
2d do .....	1 0	
Best two Merino or Saxon Ewes.....	Diploma and	1 10
Best Boar .....	1 10	
2d do .....	1 0	
Best Breeding Sow.....	Diploma and	1 10
2d do .....	1 0	

## AGRICULTURAL IMPLEMENTS.

Best Plough .....	Diploma and	£1 0
" Subsoil Plough.....	Diploma and	1 0
" Pair Harrows .....	1 0	
" Fanning Mill .....	Diploma and	1 0
" Horse Power Thrasher and Separator		
2d do .....	Diploma and	2 10
" Seed Drill or Barrow .....	Diploma and	1 0
" Straw Cutter .....	1 0	
" Smut Machine .....	1 0	
" Portable Grist Mill.....	Diploma and	2 10
" Grain Cracker .....	1 10	
" Machine for Cutting Roots for Stock.....	1 0	
" Corn and Cob Crusher.....	1 0	
" Clover Machine.....	Diploma and	2 0
" Reaping Machine.....	Diploma and	2 10
" Cultivator .....	Diploma and	1 5
" Assortment of Agricultural Implements and Edge Tools, Diploma and.....	5 0	

## THE GOVERNOR GENERAL'S PRIZE.

HIS EXCELLENCY'S PREMIUM of £20, will be given to any person in Upper Canada, who shall first introduce and put into successful operation, to the satisfaction of the Board of Agriculture, a PIPE AND DRAIN TILE MACHINE of the best construction.

The Association offers a prize of £10, for the *second* machine that may be so put into operation.

N. B. Notice must be given to the Secretary by the owner of the machine, as soon as it is in effective working condition.

## THE PRESIDENT'S PRIZES

FOR THE ENCOURAGEMENT OF THE FOLLOWING PRODUCTIONS OF CANADIAN GROWTH AND MANUFACTURE.

Best 5 bushels of Winter Wheat.....	£5 0 0
Wheat and flour form two of the great staples of Canadian exportation.	
Best 3 firkins of Butter, from 60 to 80 lbs. each, put up in suitable kegs for export by sea.....	4 0 0
Best 2 Cheeses, of not less than 30 lbs. each.....	2 0 0
Butter and cheese are of growing importance for export to England and the United States; their quality may with a little care be greatly improved, and the quantity much increased within the circle of almost every farm, without much additional cost for labour.	
Best 112 lbs. Flax.....	4 0 0
" 112 lbs. Hemp.....	2 0 0

The soil and climate of Canada are well adapted for the cultivation of these, and a ready, and it is believed, a profitable foreign market could be found for the surplus production.

Best 29 lbs. Broom Corn Bush.....	1 0 0
" 60 lbs. Red Clover Seed.....	1 0 0

Both of these are imported,—the former largely, in a raw as well as manufactured state—the latter, east of Kingston, is not produced but to a small extent. Both might be raised sufficient for the wants of the country.

Best South-down Ram, two shears.....	4 0 0
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Wool of the finer quality is now imported to some extent, its production might with great advantage be increased to supply the manufactures of the woolen goods, now so successfully made in Canada, as well as to increase the present exports.

Best Boar, one year and over, <i>large breed</i> .....	3 0 0
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Pork (Mess) is still imported to a limited extent for the lumber trade.—This, our country is capable of producing profitably, for home and export.

Best Plough for general purposes.....	1 10 0
" Horse-power Thrasher and Separator.....	2 10 0

Good Agricultural Implements are necessary for successful farming, the skill for manufacturing which, is to be found in Canada, if anywhere.

Best Essay, written by a person under 25 years of age, following agricultural pursuits in Canada, East or West, "On the dignity of agricultural labor—and the best means of making that labor profitable, in view of the climate, soil, present and prospective markets, and the increasing transit facilities of the country.....	10 0 0
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There is *mind* among the agricultural youth of Canada; its development is most desirable—and the dignity, and profitableness of their pursuit is a proper theme for its display.

To the County Agricultural Society of that County which shall carry off the greatest number of the foregoing prizes. 10 0 0

This sum to be devoted thereafter to forming special prizes, by the said County Society.

The Judges upon the foregoing prizes will be appointed by the Association, and the amount paid during the Exhibition.

George Buckland, Esq., Secretary, and such other gentlemen as he may select, will consider and determine the merits of the Essay. The Essays to be sent in, marked with a cipher, before the 1st of September to Mr. Buckland, accompanied with the name and cipher of the writer, the note only of the successful essayist will be opened. The successful essay and such others as may be considered worthy, with the consent of the writers of the latter, to be published by the Association in the *Canadian Agriculturist*.

N. B.—Competitors for the President's prizes, will not be disqualified from competing for the ordinary premiums of the Association.

#### BONE MANURE.

For the best Report on the results of the appreciation of Bone dust to farm crops on not less than three acres. £5 0

#### PREMIUMS

FOR AGRICULTURAL REPORTS OF COUNTIES IN UPPER CANADA,  
FOR 1854, OPEN TO GENERAL COMPETITION.

For the best County Report	-	-	£20	0	0
2d do.	-	-	15	0	0
3d do.	-	-	10	0	0
4th do.	-	-	5	0	0

These Reports, in addition to the usual information required respecting the condition of Agricultural Societies within their range, should describe the

various soils of the County; modes of farming; value of land; amount of tillage, and average of crops; breeds of live stock; implements and machines in use; methods of preserving and applying manures; sketch of past progress, with suggestions for further improvement. The manufacturing and commercial condition and capabilities of the County should likewise be stated, together with any other facts that would illustrate its past history or present condition.

All statistical information should be condensed as much as possible, and when practicable, put into a tabulated form. The main object of each Report should be to afford any intelligent stranger that might read it a concise, yet an *adequately truthful* view of the Agricultural condition and *industrial pursuits* of the County. While all unnecessary particulars are to be avoided in the preparation of these Reports, *completeness* should as much as possible be constantly kept in view. Such as contain the *greatest amount* of useful matter will be preferred.

The Reports must be sent in to the Secretary of the Board of Agriculture, accompanied by a sealed note containing the name of the writer, *on or before the 1st of April, 1854*; and no Reports will be received after that date. Such Reports as obtain Premiums will become the property of the Board.

N.B.—Reports on Counties to which premiums have been awarded already, or may shortly be awarded for the present year, will be excluded. A list of such County Reports will be shortly published in the *Agriculturist*.

#### SALE OF STOCK.

Parties attending the Exhibition having Stock to dispose of, can have entries made of the same in the Books of the Society, free of charge, by applying at the Secretary's Office, where those desirous of becoming purchasers can inspect the list.



PRESERVATION OF THE MENTAL POWERS.

Fatuity from old age cannot be cured; but it may be prevented by employing the mind constantly in reading and conversation in the evening of life. Dr. Johnson ascribes the fatuity of Dean Swift to two causes: first to a resolution made in his youth that he would never wear spectacles, from the want of which he was unable to read in the decline of life; and second to his avarice, which led him to abscond from visitors, or deny himself to company, by which means he deprived himself of the only two methods by which ideas are acquired, or old ones renovated. His mind languished from want of exercise, and gradually collapsed into idiotism, which state he spent the close of his life, in a hospital, founded by himself for persons afflicted with the same disorder, of which he finally died. Country people when they have no relish for books, when they lose the ability to work, to go abroad, from age or weakness, are very apt to become fatuitous; especially as they are too often deserted in their old age by the younger branches of the families; in consequence of which the minds become torpid from the want of society and conversation. Fatuity is more rare in cities than in country places, only conversation can be had in them on more easy terms, and it is less common among women than men only because their employments are of such a nature as to admit of their being carried on by their firesides, and in a sedentary posture. The illustrious Dr. Franklin exhibited a striking instance of the influence of reading, writing, and conversation, in prolonging a sound and active state of all the faculties of mind. In his eighty-fourth year he discovered no one mark in any of them of the weakness of decay usually observed in the minds of persons at that advanced period of life.—*Dr. Rush.*

POINTS WORTH KNOWING ABOUT POULTRY.—The following summary is derived from a new book, by Mr. Trotter, of Hexham, which being praised by the *Gatehead Observer* is sure to be worth consulting:—"Cochin China"—excellent at table, and capital layers, although Mr. Trotter gives no countenance to the tales of "two and occasionally three eggs in the day." He does not much commend the 'Malay'—this fowl being a great eater, and, when eaten in turn, is not of the best quality. The flesh of the 'Spanish' fowl, on the contrary, 'is all that can be desired by the most fastidious epicure;' and the hen, 'a most abundant layer,' lays 'fine, large, and delicately flavoured egg.' If she have a fault, it is the largeness of her eggs; for large eggs do not bring their relative value, and it would be ridiculous to suppose that they do not require more nutriment to produce them than smaller ones. The plumage of the Spaniard is almost invariably black. 'A few show a white feather;' and on such [very properly] Mr. Trotter 'looks with suspicion.' Yet 'birds of the purist description have been known to change from black to almost white.' Next come the 'Game' the 'Dorking' and the 'Dutch'—the last unequalled in the production of eggs. A dutch hen has been known to lay 338 eggs in three months, weighing 42 lbs

or about 10 times her own weight! The 'Polish' like the Dutch, is [of the Black variety] a good layer, and seldom shows any disposition to sit; consequently is called an 'everyday layer.' The produce of the 'Bantam' bing, commercially, unmarketable, 'this breed is out of place in the farm-yard.' Mr. Trotter leaves it, with other fowls, in the hands of the 'faucy' fair."

DEPTH OF DRAINS.—A writer in the *Agricultural Gazette*, who represents that he has had great experience in drainage, concludes that the proper depth of drains must depend on the texture of the soil—that the depth should be the point where saturation is arrested. Experienced persons, he says, can readily tell where this point is; and those inexperienced may easily ascertain it by having three short drains made early in autumn—one 2½, one of 3, and one of 4 feet deep. The drains that first discharge the water after a rain will be at the right depth for that soil.

## The Agriculturist.

TORONTO, JUNE, 1853.

### POSTMASTERS AND SUBSCRIBERS.

In consequence of complaints having been received, of Postmasters exacting postage for the *Agriculturist*; we would, for their future guidance observe, that by the special permission of the Post Master General, the *Agriculturist* is transmitted to Subscribers FREE OF CHARGE.

### EXHIBITION OF THE PROVINCIAL ASSOCIATION.

This annual event, which will take place the present year in the City of Hamilton, early in October, is already exciting considerable enquiry and attention. It is expected by many, that the next Exhibition will even exceed, both in magnitude and interest, the last one in Toronto.—The citizens of Hamilton have always evinced their deep interest in the Exhibition, by pledging themselves through their late Mayor, to subscribe £500 towards the funds. A highly respectable and efficient Local Committee has been organised, and, we are informed, a very convenient and picturesque site selected, near the Railway terminus and steam boat landing, for the holding of the Show. The Board of Agriculture will meet the Local Committee on the 8th inst., for the purpose of maturing the necessary arrangements. The public may therefore look forward with confidence, that everything will be done to make the next Exposition

of Canadian Agriculture and Industry, worthy of the country and the occasion. We trust that the public will continue to extend to the Managers, a prompt and hearty support.

The premium list, contained in the present number, has been considerably enlarged, both as regards new prizes, and in some instances, the increase of old ones. The Governor General's prize for a Draining pipe machine will, we trust, be the means of introducing so necessary and powerful a means of Agricultural improvement into Canada; a circumstance that could not fail to be gratifying to His Excellency's feelings, as his Lordship has uniformly evinced in a manner worthy of his high station and great attainments, a most laudible desire to promote the best interests of this important section of the British Empire.

It is with peculiar pleasure that we direct the attention of the reader to the premiums offered by the highly esteemed President of the Association, amounting in all to the handsome sum of fifty pounds! It is true, Agriculture cannot strictly claim the President as one of her sons. Mr. Matthie, however, as an intelligent and enterprising Merchant, is well fitted by the nature of his pursuits, to appreciate correctly the importance and claims of Agriculture, and the intimate, we might say the indissoluble relation which subsists between the Cultivator of the soil, and the Dealers in merchandize. Agriculture and Commerce must in the long run, from the very necessity of things, wax or wane together. We earnestly hope that this additional effort to elicit Canadian enterprise and skill, will be successful, and that the President's prize for the Farm Essay, in particular, will be the means of awakening the intellectual energies of a large number of young farmers. True, only one can receive the prize, but every earnest attempt to win it, however unsuccessful it may prove, will be sure to receive its own proper measure of reward. To induce a young man to form accurate habits of thinking and observing, and to commit his thoughts clearly to paper, is to place within his power of application, the most efficient means of mental culture,—of enduring enjoyment, and of being useful to his country and his race.

The handsome prize again offered by the late President, T. C. Street, Esq., M.P.P., for the best Horse of the most suitable kind for general purposes in this country, will, we trust, be attended by practically beneficial results.

An edition of the Prize List will be immediately thrown off in a separate form, as an "*Agriculturist Extra*,"—which, thanks to our attentive and most efficient Post Master General,—will be transmitted by mail to every portion of the Province, free of charge.

### THE BUREAU OF AGRICULTURE.

Since our last publication a somewhat singular discussion took place in the Legislative Assembly, on the question of a vote of money to the Agricultural Bureau. The Minister—Hon. Malcolm Cameron—was accused by certain members of doing nothing but what was of a petty character; he was strongly censured for not having produced an elaborate Report for submitting to Parliament, although the Department over which he presides had scarcely been in operation six months; and the sum asked for, £2000, was pronounced to be almost ridiculously insignificant to accomplish anything worth notice. The grant, however, was carried by a large majority.

Now, though we are neither the defenders nor apologists of Mr. Cameron, and very seldom even notice in these pages what takes place in Parliament is of a political nature,—yet the debate alluded to was of such a character, and so immediately connected with the important branch of industry which it is the duty of this Journal to promote, and, when necessary, to defend, that we cannot with any consistency refrain from expressing a few words in reference thereto.

With respect to the insignificance of the sum asked for the purposes of the Bureau, that is an objection, we think, very readily met. The difficulty,—if any members really thought it such,—can be easily removed. If the Minister of Agriculture was to ask for our advice on the matter, we would take upon ourselves the responsibility of chalking out a plan, and would assist, too, in its execution, on which might be expended as much money probably as the most



most querulous objector to the present parsimonious system could desire. Assist, then, the Boards of Agriculture at Toronto and Montreal in commencing the formation of an extensive Agricultural Museum, worthy of the cause and the country (an object, by the by, contemplated in the present Agricultural Act) and let these bodies import, and carefully test, the most necessary and improved machinery and implements; a procedure that would not fail of promoting, in a high degree, the advancement of Improved Husbandry. Again, enable these Boards to import, on an extensive scale, the *various improved breeds of cattle, horses, sheep, swine, &c.*, with a view to their dissemination over the country. If a number of the *different* breeds of stock were introduced, and fairly tried, in various localities, under different circumstances, as they could not fail to be, the present much vexed questions as to the sorts best suited to this country—its climate, soils, and markets,—would be in a fair way of being set at rest in the most convincing and satisfactory manner. The carrying out of these objects, which, we think, come legitimately within the range of the Bureau and Agricultural Boards, would require a sum of money sufficiently large, we suspect, to satisfy the expectations of the most ardent admirers of doing these matters on a magnificent scale.

As the Bureau is but the erection of yesterday, if the Minister has erred in exercising caution and strict economy in commencing the Department, most people will feel inclined to regard it as a mistake on the right side. We recommended the Minister in this Journal, as soon as the Department was established, to exercise caution, and not attempt too much at first. The work was, and still is, an *experiment*, and if prudently carried out, we have no fear but the result will be satisfactory and beneficial to the country at large. It is dangerous and delusive in matters of this kind to confound mere haste with healthy progress. Whatever instrumentality is devised and set in motion for the benefit of Agriculture, or indeed any other great interest, must have sufficient time for effective operation. The Minister has already, we understand, collected a number of interesting and instructive

facts, relative to the actual progress made by individual settlers in different parts of the Province, which he intends using as materials for cheap tracts for circulating among the people of the United Kingdom and the Continent of Europe. Mr. Kirkwood, who is now in Europe, in connection with the Bureau, is, we see, publishing some interesting letters in the leading British journals, in which several of these facts are incorporated,—a proceeding that cannot fail to draw public attention to the capabilities and claims of this country. It is a notorious fact that the people at home know much less of Canada and the North American Provinces than of the more distant Southern Colonies. Now the Minister of Agriculture has already commenced a system of communication with Emigration Agents, &c., at home and abroad, which, if only followed up with energy, cannot fail to benefit this country very materially.

In dealing with so important an interest as Agriculture, in Parliament, all personal and party feeling ought to be buried in the patriotic desire to promote the welfare of the country,—a result, the benefits of which, are shared by all. Whoever puts forth an effort, whether with his head or his hands, to improve Agriculture, is a benefactor of his country, and a co-operator with his God;—who, in the administration of his natural government, has no respect of persons or parties, but causes his sun to shine and rain and dews to descend alike upon all,—the evil even as well as the good. Agriculture in Canada is steadily, if not rapidly improving, and there is no circumstance which the country would, in the end, more deeply deplore, than having any portion of our present improved system for aiding its progress, impaired or interfered with by a captious party spirit. Whatever difference of opinion may be conscientiously held respecting the general policy of our present Colonial Ministry, upon the principle of "*honor to whom honor is due*," we hesitate not to say, that if we thought that policy one unbroken series of unmitigated evil, we would place to their credit *the formation of a Government Department of Agriculture*. Whatever parties may be destined hereafter to occupy power, if only common prudence and energy—with a moderate

share of really patriotic feeling direct their course, this department will live and flourish.—It will be indeed a dark day for Canada, that should witness its decline.

#### GOLD OF PLEASURE.—*Camelina Sativa*.

We proceed, according to promise, to give some account of the cultivation and economical uses of the *Camelina Sativa*, called by Linnæus *Myagrum Sativum*, and commonly known by the attractive name of *Gold of Pleasure*.

This plant can scarcely be said to be a native of the British Islands, although it has now become indigenous there, especially in fields that have been cropped with flax and hemp, it having been introduced with the seed of their plants from the continent of Europe, in some of the more southerly countries, in which its growth is so rapid that it will produce two crops a year. The stem usually grows from one to two feet high; its leaves are of a bright green, smooth and narrow; the flowers small and yellow; its pods are pear-shaped, divided by two large and two smaller ribs. Each cell contains several small and oblong yellowish seeds. The pods being peculiarly liable to open when fully ripe, much of the seed will be lost, without proper care, and the plant often becomes troublesome from this cause, among succeeding crops. In some places, it is said to have established itself as a common weed. In gathering, therefore, it should be handled carefully. Early in the morning, when the dew is on, is the best time.

A few years since, a popular feeling was attempted to be got up in some parts of England in favor of the introduction of the Gold of Pleasure as a field crop; and several sanguine persons warmly espoused its great value in a regular and improved rotation. We have only seen it cultivated in small patches; and not having heard much about it for the last half dozen years, it is natural to conclude that the sanguine anticipations once indulged in respecting it have not been realised. The plant is certainly hardy, and is but little liable to the attacks of aphides, which often produce much havoc among the Brassica crops. It grows rapidly, and will flourish on thin sandy soils. Its chief value consists in the oil yielded by the seed. This oil is exceedingly pure and sweet, burns brilliantly, with comparatively little smoke, and scarcely any smell. For feeding purposes the seed is decidedly inferior to flax. The stem yields a coarse fibre, which can

readily be manufactured into cloth for sacks, sails, &c., and also, it is said, for coarse packing paper. The stems are sometimes used on the continent for thatching cottages and outbuildings, making a light and tolerably enduring roof; and they are often made into blooms.

It is stated in some of the English journals, that a superior variety has recently been introduced, and considerably cultivated in the northern portion of France, under the name of *Le Cameline majeure*, which is of stronger growth, its seeds yielding a larger amount of very superior oil to the common varieties. Several species of the Cameline have been introduced into Britain, and tried by the curious, but, it would appear, without any results of much importance. From all we can learn of the culture of this plant in Europe, we come to the conclusion, that on poor, inferior soils, where the ordinary cruciferous plants cannot be grown with success, the Gold of Pleasure may be profitably cultivated for its seed alone. Like all plants raised for seed, the *Sativum*, however, must be a great exhaustor of the soil, and we very much doubt whether the inferior sandy soils, which are said to be suitable to this crop, will yield a profitable return either, without manure, or at very long intervals.

The time of sowing is in the spring; the month of May we should think quite soon enough for Canada. Our climate we take to be peculiarly favorable to the production of this, and the oleaginous plants generally. We yet hope to be able to give this plant a trial on the experimental farm during the present season. From 5 to 6 or 7 lbs. of seed per acre are sufficient, sown in drills or broadcast, on a well prepared surface. In England, the crop may be said to vary from 18 to 25 bushels per acre; but under the warmer and less cloudy skies of central and southern Europe, the yield is considerably larger. The seed is worth from 5s. to 6s. sterling per bushel.

John Johnston, an extensive farmer near Geneva, has now on his farm 25 miles of drains. His son-in-law, Mr. Snow, on an adjoining farm, has laid 88,000 tiles and drained 200 acres of his land. Mr. Johnston says, "the whole country ought to be drained;" a remark which comes nearer the truth than most *figurative* ones do.

IMPORTANCE OF STRAW.—Twenty tons of straw will, by littering and foddering well-fed cattle, make at least 100 tons of dung. Good crops of wheat, barley, and oats respectively may yield 20, 18, and 25 cwt. of straw per acre. But of course the produce is exceedingly variable on the same soils in different seasons, and on different soils in the same season.



## COUNTY OF WELLINGTON FARMERS' CLUB.

The monthly meeting of this Association was held at Guelph, April 8th, T. Saunders, Esq., in the chair. The attendance was not so large as on previous occasions, but every attention was paid whilst Mr. Wright delivered the following address, on "*What description of Neat Cattle may be most advantageously raised in this County?*" He commenced by saying,—

MR. PRESIDENT:—We have to confess that we enter upon the duty that devolves upon us with a degree of reluctance, arising from the fact that we do it under the most unfavorable circumstances,—not occupying what can be called, with any degree of propriety, land adapted to the raising of stock,—having no low meadows, and neither running streams nor living springs of water, to which it is universally considered essentially necessary, and almost indispensable, that cattle should have free access at all times. We are ready to admit that, during the winter, we don't feel the disadvantage or inconvenience arising from such deprivation to be very great, having an excellent pump in the barn-yard as a substitute. This enables us to have our cattle confined; and we are disposed to think that, to a certain extent, it gives us an advantage over many, especially at this season of the year, as our cattle have no opportunity afforded them to ramble (like many others) over the pastures while the snow is disappearing, and so to injure them very considerably by trampling, which we consider ought to be avoided, and therefore ought to be condemned, as no advantage can accrue from the practice. Having thus shown how we are circumstanced, we believe if the raising of stock is a subject which at all times claims the attention of the farmer, it must at the present time be one which demands his most serious consideration; and the subject named for this evening we consider one of immense importance, viz., "*What description of Neat Cattle may be most advantageously raised in this County?*" In attempting to bring the subject before you, it is not our intention to enter into the relative merits of the various breeds of cattle. We find each has its advocates even in Britain, where almost numberless experiments have been made, with the most careful attention, and with means the most ample, and where breeders must have had every opportunity of testing their merits, and thereby ascertaining their capabilities. It is evident that, even under these favorable circumstances, they could not attain sufficient knowledge to enable them to give a unanimous decision as to which is best; for each party has still its favorite breed, and which it is strenuously contended is best adapted to accomplish the desired object. Under such circumstances, to decide which is best must be a question fraught with difficulties in its solution. As in Britain, so in Canada, each of the improved breeds has its advocates, and the native cattle have theirs also. It has frequently been asserted that they are hardier than the improved breeds, and some have gone so far as to say "that the Canadian cows are infinitely superior to any of those *fancy* breeds—that they produce more milk on plain

feeding, stand starvation much longer, and are better suited to the climate." Now, while we are ready to accord to them many excellent qualities, we scarcely believe all that has been said. That they are hardy, and capable of enduring great fatigue, we admit; many of the oxen are well adapted for the yoke, being active, and good workers, and many of the cows are excellent for milk; but that they possess superior qualities over and above the improved breeds, we are not prepared to admit; and as to their being better adapted to the climate, we are sure that such an opinion is incorrect. Much has been said about the severity of our winters; but we are compelled to conclude that they have no injurious effect on the health of neat cattle provided with sufficient shelter and food, but rather the contrary, and that they are conducive to it. We draw these conclusions as the result of observation during a residence of twenty years in Canada; and we are abundantly satisfied that neat stock is not subject to the same amount of disease as in England, and we know of nothing to which it can be attributed but the climate; and as profit is the object of every farmer, we should naturally suppose he would give such careful attention in the feeding and general treatment of his stock as would be most likely to accomplish his purpose; and no one of sane mind, we should think, would attempt the experiment of starvation as the best means to acquire a profitable return on his capital and labor. The description of neat cattle most advantageously raised by the farmer, we apprehend to be such as are best adapted for the following purposes,—the dairy, the yoke, and the shambles. You are all fully aware that we are not possessed of any herds of thorough-bred cattle, and that the improvement of our stock has been effected by putting the native cows to Durham bulls; and by selecting the best heifers, and invariably putting them to thorough-bred male animals of the Durham breed, we have succeeded to a certain extent; and we find our cows as good milkers as ever we found the natives. We have not found any trouble in wintering them—they require no pampering—and we believe them to pay better for the food they consume than any native cattle we ever possessed, and that they are equally if not more hardy than the natives. The oxen raised from the improved cows we find to be well adapted for the yoke, being active, powerful animals, and excellent workers, well suited to every purpose for which they are required, easily fed to a great weight, and at all times saleable at remunerating prices. When reared for the shambles, they very far excel the natives—their great tendency to take on flesh, their aptness to fatten, enables the owner to effect sales at almost any age. This must be a considerable advantage, and ought to be fully appreciated. We know of no description of neat cattle (except thorough-breds) better suited for this country, the greater part of which, having a rich and productive soil, well adapted for raising succulent roots, such as mangel wurtzel, Swedish turnips, &c., and most parts of it for excellent pasture, and being well watered, it is every way well calculated for rearing and feeding a large breed of cattle to advantage.

Mr. Logan being called upon as a successful breeder of cattle, said that he agreed in all that had been said in reference to the Durham, and further, was decidedly of opinion that the grade Durham could be kept on less food and wintered easier than the native breed.

The Chairman came to this country twenty years since, and soon after Mr. Wingfield brought in his Durham cattle to this neighborhood; but there was such a prejudice against them, under the impression that they would require better keep and attention than the native, that they were generally avoided; and it was only after two or three years, and the loss of several head of stock by the hollow-horn, that he ventured on a cross, which caused him to regret that he had not tried it sooner. His experience since that time had satisfied him that the nearer an approach to the pure Durham the more profitable was the result, whether required as stock or for the butcher.

Mr. Logan bore testimony to the advantages resulting from crossing with the Durhams, in having the beasts ready for the butcher from one to two years earlier than the native breeds.

Mr. H. Tolton considered the improved breeds more advantageous to the farmer both in respect to being more easily kept and also in coming to maturity at an earlier age. They might in some instances be lighter, yet their quality was such that they would at any time command a market. There was a general impression that in this country stall-feeding would not pay; but with a good foundation to work upon, he was decidedly of opinion that it would answer well. Durhams could be made almost any weight, and, under any circumstances, would command a far better price than much heavier animals of the common kind. He had known a two-year old grade heifer sell for \$30, when a large Canadian ox would scarcely command half that sum. The object of the farmer was to raise such stock and grain as would afford the most ample remuneration. Taking this view of the question, his limited experience enabled him to say, that the Durham was the preferable breed. He believed that the Devon did well on a large pasture, and would ramble over more ground than the Durham. Indeed they so loved a good pasture that they never failed to have one, even if they had to seek it themselves. They were active too, for they could obtain admittance to a field without the place of inlet being discovered. And their very activity caused them to require extra care and food to keep them in condition. The Durham could take coarser food and do well on it, and if given better feeding they presented a return. They could be wintered cheaper than either the Devon or the native breed. The Devon had credit for being active as working cattle, whilst the pure Durham had not to any extent been proved, in consequence of the very general demand for the shambles. The few yokes he knew were good and active; and the best yoke of oxen he had ever seen, the most active, useful and laborious, were full three-quarters bred Durham, and very heavy. The owner had refused \$130 for them, and he believed they would command \$160.

After some observations from the chairman in reference to high-breeding, Mr. Tolton said, there was one thing not hitherto noticed,—the demand for Durham and grade cattle and highly remunerating prices. In illustration of this view of the question, he might state, that last winter Messrs. Parks & Freeman, two American gentlemen, selected two grade cows from his stock, and pressed him to sell them, and although he refused, they urged him to name any price he thought proper; but as he had no intention of selling them, he was afraid to mention any sum, however extravagant, lest it should have been accepted. They next tried to purchase from him a lot of lambs, which he likewise refused to part with, for the simple reason that he did not know where he could again supply himself with either sheep or cattle to his taste. He was persuaded that the gentlemen were prepared to have paid an extravagant price for such stock as took their fancy.

Mr. Wright stated, that a gentleman from near Albany had offered him £10 for a grade heifer two years old; and on his declining to sell, stated that the beast would command \$200 in Albany.

Mr. Phin having requested some of the breeders present to state the mode of feeding they adopted—

Mr. Tolton was again called upon, and said he generally gave hay with turnips once a-day, but in cold weather preferred hay or straw, and chopped stuff with bran, which latter he found a good substitute for turnips. One of his cows, which was so poor last summer that he was ashamed to see her on his pasture, had much improved this winter on such feed. Whilst milking, he used turnips and hay, at other times chaff and hay, to which he had lately added one quart of ground oats daily.

Mr. Phin said that during the past winter he had fed on half a bushel of turnips and straw, and his cattle never turned out worse. Mr. Whitlaw fed the same, and his stock never looked better.

Other gentlemen bore testimony to the superiority of the grade Durham for general purposes, and the feeling of the meeting was unanimously in their favor.

The mode of rearing calves was also referred to, when one party was in favor of hand-feeding, and others of allowing the calf to suck the cow, declaring that the latter would pay fifty per cent. more than dairying.

It was resolved that the next subject for consideration should be, "The most advantageous mode of cultivating Fall Wheat." In consequence of the Spring work coming on, the next meeting will be held in June.

**AUSTRALIAN DIAMONDS.**—Lieut.-Colonel Sir Thomas Mitchell, Surveyor-General of New South Wales, has just arrived from that Colony, bringing with him a diamond of good form and of the finest water, weighing three quarters of a carat, and some very fine large rubies, found at the gold diggings at Ophir, West of Bathurst. Sir Thomas has presented the diamond and a sapphire found in the same locality to the Museum of Practical Geology.



FARM BOUNDARY LINES.

To the Editor of the *Agriculturist* :

DEAR SIR,—I would take the liberty of soliciting the use of your pages as well as your personal influence, in drawing the attention of the Board of Agriculture to a subject of the most serious interest to the farming community of this Province; a subject which, if duly weighed, you will find affects not only the physical well-being of our country, but trenches deeply on the moral and social relations of life.

The matter to which I allude is the boundaries of properties. This country is fast becoming populous and crowded with small holdings, which in the absence of clear and well-defined laws on this subject, promises to involve the rights of *meum et tuum* in a mass of inextricable confusion. The present seems a moment when we are especially called on to grapple with this subject, and when, by submitting to a little unpleasantness and squabbling, we may perhaps overcome an evil which threatens to become a monster grievance. There seems at the present moment a general expectation of a rise in the value of property, which has for some time stood almost below par; the increase of Bullion, the influx of foreign capital, and proximity to foreign markets, promised by the many railway schemes now in advance, and above all the geometrical progression of labor upon labor accumulating on our various farms, under the influence of an improved system of Agriculture, all call on us to set this question for ever on a clear and decided footing. Few men, not intimately conversant with the country districts, know to what extent this great evil reaches. In some sections, I venture to say, you will scarce find a farm, certainly and clearly defined; and how can it be otherwise? The first survey of the country was *let* often to most careless and incompetent persons, but had they possessed both these qualities in the highest degree, every one knows that a compass line cannot be run any distance through the forest without involving error, limited in its amount only by accident, whilst the chain is, if possible, a more uncertain guide, where swamps, streams and fallen logs bar your way. What after all were the marks left by these surveyors? A little stake liable to be pulled up or shifted by any interested or curious wanderer. Who does not acknowledge the temptation of a fine stream or house site, a beautiful spring, or even a handsome tree, the squatter scarce thinks it worth while to *covet*, far in the woods, where right is hardly known. The wild beasts themselves might easily knock aside a mark, which by the readiness with which it could be destroyed or altered, seemed to offer a premium on carelessness or villiany. Government sells this land often to needy men, to whom the expense of a survey is a serious object, especially where it involves the cost of some acres of land. You ask the boundary of your estate, you are told to employ a surveyor, perchance you have means and forethought enough to do so; what is the result? As with me, the same man has given me three separate locations for my farm, purchased direct

from Government. If you go on without troubling these gentlemen, in a few years, perhaps, your neighbour comes and cuts off your Barn, a case I have been witness to.

Is this justice? No! the time has come when farmers should not ask but *demand* from Government as a right, a straightforward and final settlement of this question. They have given them deeds and taken their money without demur; where is the quid pro quo? anywhere??

It is not the value of a few feet of land, though right is right; it is not the grasping spirit which would not yield an inch to a neighbor; but it is the spirit of improvement which now cries on you for aid. The time has come when our land not now virgin soil, requires that our water courses and drains be thrown into proper channels, and shall we shift them every year at the beck of an interested surveyor, or be dragged into an action at law, uncertain in everything except its cost abundant. Rails are becoming scarce, and can we build stone walls or thorn hedges on uncertain boundaries? Shall we be driven to perhaps a very inconvenient part of the farm for our increasing buildings, whilst a fine spring with a fair prospect and warm shelter, invite us near the side line? Above all, shall we encourage a rich growth of trees to protect us from the chilling wind or sparkling sun, that when they have arrived at maturity they may afford fuel to our relentless neighbours? But it were endless to recount the evils arising from careless, instead of permanent fencing; slovenly *Bars* instead of trim gates; corners left to a luxuriant growth of weeds, because they dare not be occupied; old logs, thistles and the interminable rubbish of disputed territories, straying cattle, fence corner squatters, choked drains, whilst around your buildings hogs, cattle, men, wallow in a bottomless Canadian mudhole.

I come to the moral and social side of the picture. Two friends, uncertain as to the line between them, agree to employ a surveyor,—a slice comes off one; try again: a slice off the other; surveyors dispute, neighbors dispute, from less to more they go, each fearing the expenses of an action at law. The dispute is handed down to children and to children's children, until at last the seed falls on pugnacious ground, and down-right fighting and cuffing, with cursing and bitterness, is the result; or the more lawful expedient of law is resorted to and perhaps not even the oyster shell is left. If there be a disputed line, the neighbor is tempted and strips it of everything valuable, often even to the defying of law itself, which he knows to be a costly bugbear to the party he is wronging. Lying and wickedness, false-swearing and deceit, enter within the boundary question, and it would be hard to single out the many feelings which combine to give an acerbity to territorial disputes among male holders, an acrimony such as I have noticed few other grounds of quarrel to cause; perhaps its strength arises partly from the feeling that you are tied together and struggle on: on our school principle of nailing the inexpressibles of two young pugilists to their seats, so that they might be compelled to face each other and fight it out. The evil has been sorely felt in all the

older settlements; shall not some provision be made for those new districts now rapidly filling up to keep them from the "*beginning of strife*," either to provide for the rectifying or to perpetuate the error? The loss is much less now than it will be 20 years hence, and much moral evil would be avoided.

It is not for me to bring forward projects; more law, more leisure, and, I hope, more patriotic spirit are to be found in your Board, who have taken on themselves the superintendence of our agricultural affairs; and I feel assured that such is the weight of this case, that it has only to be brought forward to elicit their utmost exertions in behalf of an agricultural community, which is proving the most persevering and enterprising in America, and perhaps the most industrious and hardworking in the world.

The *present moment* is the time; difficulties *must* increase at every step onward, and who but the Lawyers can look with anything but regret on the long vista of litigation that is opening to absorb the returns, strained from the bone and sinews of our laboring farmers; a fund which, were it to revert at once to the improvement of the land, would enrich our country and contribute to the contentment and comfort of the class who earned it.

Yours, Respectfully,

ROBERT HUME.

Tyne Dale, Port Hope, }  
June 1st, 1853. }

The evils complained of by our correspondent are multifarious, and their correction is no doubt a matter of grave importance. The Board of Agriculture will do well to entertain the question; but an efficient action relative thereto must, of course, rest with the legislature. We trust the matter will not be lost sight of.—EDITOR.

#### HIGH ENGLISH FARMING.

To the Editor of the Canadian Agriculturist.

SIR,—Having just returned from England, and being struck more than ever with the difference between the appearance of farms and farming stock in this country and that favoured island, I am induced to think that a short description of a farm, such as it ought to be, would not be unacceptable to those of your readers who have never had an opportunity of seeing what may be called real high farming. The farm I allude to, and which is well worth a visit from any one whose avocations may take them that way, is the estate of Sir John Conrey, near Reading. Not the least striking of its peculiarities is that it possesses not one single fence, save the one that separates it from its neighbours, the cabole of the farm being comprised in one huge field of 270 acres, all the intervening hedges, of which there were originally many, were taken down by the present owner when he came to farming some seven years ago, the land was drained 4 feet deep, at distances varying from 15 to 30 feet according to the nature of the ground, and trenched with the

spade, still retaining the top spit uppermost to the depth of 22 inches, at a total cost of some £5000. A few blocks of the subsoil containing some three or four cubic feet in each, are filled up at the farm yard gate as a sort of trophy, and hard enough it must have been to win, for they are of the substance commonly called plum-pudding stone, and of such was the subsoil chiefly composed. Even now in some places the soil is little else but gravel, and from such a soil by dint of skill and industry, excellent crops have been gathered. The removal of fences has opened out to the visitor at one view, all the different sorts of soil of which the farm is composed; here you see a little bit of quicksand, there peers out a black patch of peat, but principally gravel meets the eye. On one piece close to the rickyard, nine inches of clay was laid two years ago, but the gravel has already begun to show through. To convince the most sceptical of the necessity of draining, there is what Sir John calls the bigots hole, viz., a brick pit about four feet square, and as many deep, which is placed at the junction of two main drains leading from a considerable portion, some 40 acres of the *driest* land, and where water is seen running in the driest weather.

The Ducie cultivator is I believe, the principal implement used on the farm, but the iron ploughs of Howard and Ransome, and the old Kentish turnwrest plough, have plenty to do, the latter implement especially; the steward Mr. Slathaway informed me, being capable of executing any work required of a plough, from skimming the surface at three inches, down to subsoiling at 18, in a most admirable manner from the simplicity of its make being difficult to injure, and easily repaired by unskilled hands. As to the working part of the homestead, a most beautiful steam engine of ten horse power, made by the celebrated firm of Barrett, Exall & Andrews, of Reading, drives a thrashing machine of complete contrivance with the necessary appurtenances of two winnowing machines, barley hummeller, &c., so arranged that the sheaf is put in its proper place and the grain comes out at the other perfectly fit for market, and most beautifully clean. By means of a long line of shafting with belts attached, the engine drives also a cape creesber turnip cutter, chaff cutter, grain bruiser, and every thing required for preparing food for stock. A nice stable is close at hand, with a passage at the head for feeding the horses quickly, and their food is composed of eight pounds of hay and ten pound of straw cut into chaff, 5 lb. of oats, 1 lb. of beanmeal, moistened with 1 lb. of bruised linseed, steeped 48 hours in 15 pints of cold water, which quantity lasts them for 24 hours, and very nice it smells I can assure you.

Next to the stable is the implement house containing Garrett's drills and horse-hoe implements, which I believe no well conducted farm is without. The oxen are kept in boxes about 12 feet square, three rows of boxes under one shed and one or two under another, the manure being removed from under them when it has accumulated to a certain height. They are also fed upon a mixture of the same sort as the horses, but not quite so stimulating, without the oats I believe, and with plenty of turnips and oilcake. They



look very warm and comfortable. They are all of the North Devon breed, as Mr. Slathaway considers they fat better than any other breeds, and he can generally get them a year older. The pigs and sheep are fed in sheds raised some height above the ground, roofed with asphalted felt, and floored with boards 3 inches wide, and  $\frac{1}{2}$  an inch apart, through the apertures of which the manure drops into the space below, where it is mixed with burt earth, ashes, &c. &c., laid aside at times into a shed where it remains till dry enough to be drilled by a regular manure drill. The oxen some thirty in number, were I believe the second relay that winter. I am almost afraid to mention the number of sheep, but I believe one thousand had been in the sheds last winter of the Down varieties of sheep; the pigs I forgot to enquire the number of, but I believe some hundreds of them are fattened every year. No stock is bred on the premises save the pigs, which were a variety of Berkshire of Sir John's own manufacture as one may say, but they are also, I was told, to be purchased for the future. I ought to have mentioned that water is supplied by pipes to every part of the steading, all soft water as being best suited to stock. Nothing but one horse carts are used on the farms, and they bring home in harvest a load of a ton. The rickyard is of a size proportioned to the fertility of the fields, which may be guessed from the fact of the average yield of wheat having been raised from 20 to 48 bushels to the acre, and the ricks will soon be built upon trucks running on a railway, so that each rick may be wheeled readily up to the thrashing machine when required.

I much fear I am getting to prolix, but one's pen is apt to run away with one upon such subjects, and on the subject of agriculture one has always something to say of good things one has seen; but I ought to mention the farm is worked on a four course shift.

I remain Sir,

Yours respectfully,

A HAMILTON FARMER.

Woodstock, C. W., May 10th, 1853.

Mr. Farmer will please accept our best thanks for his very interesting communication, and we shall be happy to hear from him again before long, on subjects of this nature. In farming as in morals, the standard of excellence cannot well be placed too high.—Ed.

#### CLOVER SEED.

*For the Agriculturist.*

DEAR SIR,—Although Wheat has always been, and will long continue the staple production of our country, yet I think it very desirable that we should grow, at least as much of every article (for which our soil and climate is suitable) as is sufficient for our own consumption.

Among many other articles to which our farmers might profitably turn their attention,—the production of Clover Seed should not be overlooked. It has been well said of Clover that "it is valuable to the farmer for three important purposes—to feed his stock, fertilize his land, and to

fill his purse. His cattle thrive upon it when green, as a pasture in the summer, and in the stall when fed with the hay in winter; his wheat and corn thrive upon it when buried and decomposing in the soil, and his purse increases with the increase of his cattle and crops. It is the very basis of good farming on land susceptible of alternate husbandry."

Amongst the other advantages attending the growth of Clover Seed, it may be stated, that it does not interfere with, but rather encourages the growth of our great staple, Wheat; it comes in too for its mowing, before the hiring of other haying comes on, and for its second cutting after harvest is got fairly over. It can be grown too, fully as profitable in the remote settlements of the country as near the towns, as a very large amount of it in value can be carried at one load. I have drawn away fifty pounds worth at one load, when Clover Seed was at four dollars and a half a bushel! The clearing which requires most labour, can be done during winter when there is most time to spare from the other labours of the farm—our soil and climate seems well adapted to its growth, and there is no peculiar difficulties attending its cultivation—we ought surely to produce as much as to secure for *home consumption* if we did not raise for exportation.

Though I have no doubt that the subject is familiar to many of your readers, yet a few hints on the cultivation of Clover for seed, may not be out of place, more especially as I have not observed any article in your Journal lately on the subject.

The soil on which Clover flourishes most luxuriantly, is the rather dry loams, with a strong clay subsoil; but it will grow on almost any soil, if not too wet. It grows well on very light soils, but when grown on this class of soils it does not produce so much seed as on heavy land. There are several varieties of Clover grown in the country; the kind I have always raised, is the common small kind. I have been told that there is a variety of clover indigenous to the *plains land*, which does not throw out with the frost in winter as the common kind sometimes does. I have seen but very little of the plains. I have had no opportunity of observing this variety of Clover, perhaps some of your readers that live on the plains, and have observed and used this Clover, will be able to inform us through your columns, what variety it is, and for what purposes it is superior to our common kind.

In seeding down for Clover Seed, the land ought to be in good heart and clear,—land that has had a root crop with manure the previous season, will answer best. Barley is generally thought to be the best kind of grain to seed down with, but after seeding down with Wheat, Barley and Oats, having seen so little difference, I could hardly say which was best. Of the quantity of seed sown to the acre, something depends on the soil and the season. I have had good crops of seed from four pounds to the acre, and I have seen ten and twelve pounds of seed none too thick. The usual quantity of Timothy seed should always be sown, as it helps the first crop for hay, and does no harm to the second crop for seed. "As like produces like" in the vegetable,

as well as in the animal world, it is of importance to say more, but the very best seed of last year's growth, on land intended for a crop of seed. Of the best method of covering in grass seeds, there is much difference of opinion. Some say *before rain*, others roll them in;—having tried both methods, I prefer harrowing them in, as I have always found mine to do best when put in with a single turn of the harrows.

Where intended for seed, care should be taken to cut the young plants as little as possible in the fall, and never to allow a beast on them in spring, as I think is very injurious to cut down young Clover bare in the fall. On light soil, it is, I believe, a common practice to cut the clover intended for seed, up till about the first of June, and then allow it to grow for seed; thus cutting only once, this plan is said to answer very well on this kind of land, but as I am always rather more anxious for hay than pasture, I have never tried it.

The first crop of Clover should be cut as soon as it gets fairly into blossom; in ordinary seasons, from the twentieth of June, till the first of July, is the best time for cutting, though in favorable seasons, the seed will ripen even when cut as late as the middle of July; but when Clover is cut early the first time, it gives to the second crop a better chance to ripen well. I have always found the earliest cut give the best seed—as there is then generally more moisture in the ground than later in the season, and the seed gets a chance to ripen early in the fall before there is any frost to hurt it, and when the weather is generally better for securing the crop.

The most critical time for Clover Seed, is just after the first mowing; should the weather prove very dry, the Clover starts very irregularly and the crop of seed will be light. I have seen a difference of more than a bushel an acre in the same field from two day's difference in mowing, a shower having fallen in the meantime.

The first crop of hay from Clover intended for seed, is said not to be so good for horses—but for sheep, calves, and feeding cattle, it is invaluable—they prefer it to all other kinds of hay—when it has been properly cured—they eat it with avidity and thrive well upon it.

The quantity of seed varies with the soil and the season, my own crops have run from half a bushel to five bushels an acre. I have known seven bushels an acre, which I consider a very great crop; from three to four bushels an acre may be looked upon as a fair average crop.

A TENANT FARMER,

May 28, 1853.

We are obliged to our practical correspondent for his valuable communication, and should be glad to hear from him again, on his mode of cutting and securing his crop, and the preparation and marketing of the seed.—*Editor.*

A professorship of farming is about to be established at the literary institution at Fairfax, Vermont, with an endowment of \$20,000.

LAWNS or Grass Plats should be mown as often as once a fortnight, if it is desired to secure a fine, smooth turf.—*Ohio Cultivator.*

## HEREFORD CATTLE.

G. BUCKLAND, Esq.:

DEAR SIR,—Will you please publish the following, which you will find in *The Boston Cultivator*, of April 30, 1853. Such proofs are worth all the *dicla* in the world.

Truxton Wood, Esq., of Wenthrop, Maine, wishes to know where he can obtain a good bull of the Hereford breed. Mr. W. writes in reference to the progeny of a Hereford bull bred by Mr. Sotham, and brought into Maine several years since, as follows:—"Oxen bred from that bull have brought *more money* into this town than an equal number of any other breed that has ever been introduced here. They are truly valuable cattle—feeding and thriving on anything that comes to hand—besides being very easy to match and hardy, good workers. I think they are everything we could wish in oxen, being good to stand the hot weather as well as cold." I send you this notice, as I think the climates of Canada and Maine very similar, and to show what the "Parson's *Rhinoceros tribe*" are doing, and will show you a *similar* instance in *milking for butter*, before next Christmas.

I am, dear Sir, yours sincerely,

WM. H. SOTHAM.

Piffard, Liv. Co., N. Y., May 12, 1853.

## BARNETT'S PATENT FLOUR MILL.

We have been favored with the following communication from Mr. Kirkwood, who is now on a tour of observation in the United Kingdom, collecting information on the subject of the growth and manufacture of Flax, by authority of the Bureau of Agriculture. From Mr. Kirkwood's active and observant habits, we anticipate not merely an interesting, but a practically useful report, on his return:

Bedford Flax Factory,  
Thornton, Kirkcaldy, 29th April, 1853.

DEAR SIR,—I enclose a short printed account of Barnett's Patent Flour Mill, to which, if you deem it suitable, you may give publicity. It is new here, and considered good.

I am your obed't serv't,

A. KIRKWOOD.

GEO. BUCKLAND, Esq.,  
Editor *Canadian Agriculturist*, Toronto.

## BARNETT'S PATENT FLOUR MILL.

Exceeds all other Mills in its simple construction, its combined action of grinding and dressing, and its easy adaptation to all ordinary mills in common use. This mill dresses a great portion of the flour during the progress of grinding, the miller having at command the means of taking out the quantity according to the quality of flour he requires. It is by this simple combined operation of grinding and dressing, that the patent mill is enabled to grind such extraordinary quantities of flour, in a fit state for use, as soon as it leaves the mill.

The generally admitted hindrance in ordinary mills to the proper development of the flour, is the liability of the meal becoming heated during the process of grinding, and the consequent deterioration of its quality. At the same time a waste of power is in-



cured, owing to the clogging effect of the heated meal; and great inconvenience occasioned from not being able to dress the meal as soon as it leaves the stones. In the patent mill, as soon as grinding has commenced, the liberated fine flour passes over wire-gauze openings in the lower stone, when the finest flour is separated from the meal. In the upper stone, a series of openings are so arranged and furnished with air-boxes, facing the direction in which the stone revolves, that the air is forced down upon the grinding surfaces, cooling the meal, and facilitating the passing of the superfine flour through the wire-frames, in a very cool state. The result is, that while the ordinary mill-stones will grind 200lbs. per hour, the same mill-stones with Barnett's Patent Principle affixed, will grind 400lbs. per hour—in each trial the stones being in equal condition, and both trials with the same wheat. From ordinary wheats a superfine flour may be separated; and while from one-third to above two-thirds of the flour is delivered ready dressed into the bag, the remainder of the meal is ready for dressing immediately. In bad weather, the patent stones will grind damp samples, which common stones cannot grind; and from the quarter of wheat more flour is obtained than when ground by common stones. From ordinary wheats a valuable portion of superfine flour, suitable for confectionary, may always be obtained; thus enabling any country miller to produce flour of any quality to suit his customers, or to send to the best markets.

## MISCELLANEOUS.

### THE ATMOSPHERE, AND ITS EFFECTS ON ANIMAL LIFE.

We find in the *Scientific American* the following report of an interesting lecture lately delivered by Dr. Griscom, at the New York Mechanics' Institute, on the "Influence of Air in connection with Animal Life:"—

The lecturer commenced by saying that he supposed some of them would be surprised to hear that they lived at the bottom of an immense ocean of air fifty miles deep; yet it was so; and the color of this ocean, which is called the atmosphere, is a deep cerulean blue. To perceive this color it was necessary to be able to see at once the whole volume, and also on a calm and clear day, for no color could be perceived if seen in small quantities, or when there was either wind or haziness. In like manner, the color of water could not be seen in small quantities, and was only perceptible where there was a vast expanse of ocean. The air was also a substance capable of condensation and expansion. The expansion was seen in the winds, by which the ships were made to traverse the ocean, and also in windmills. The tornado was another phase of its expansion, by which trees were uprooted and houses overturned, and was almost equal to the power of steam. The greatest weight of the atmosphere was fifteen pounds to the square inch, and this weight presses on every way, both upwards and downwards. To explain the pressure upwards, the lecturer exhausted the air out of a large vase, which then remained fast to the plate on which it stood, but on the air being let in, it was easily removed. I remember, said he, being asked the question, if there is a pressure of

fifteen pounds to the square inch, the reason why we were not at once crushed by the weight; but this is, as I before explained, because the air presses in all directions with the same force; and hence there is an equilibrium. This is a most important element, and one which requires to be known; and also, that the air never presses more than fifteen pounds to the square inch.

The next quality of the air is elasticity. Press it so as to make it occupy a smaller space than it otherwise would, and then take away the weight, and it comes back and occupies its original space. The lecturer then explained that in the air there were two gases; one oxygen, which is that part of the atmosphere by which chiefly we live, and which is the one-fifth part; and the other nitrogen, which is four-fifths of the atmosphere. Oxygen supports life and combustion, and nitrogen restrains its effects and dulls its operation. The quantity of air which a person consumes depends in a measure on oneself, and by training can be made more or less. The tailor and shoemaker take little in comparison with the laborer and public speaker and singer, or those who cry commodities for sale through the streets. A man in good health makes eighteen respirations in a minute, and in 24 hours consumes fifty-one hog-heads of the air.

As the oxygen which supports life is so small, we ought to be very particular how we permit other gases to mix with it and vitiate it. The blood which enters the lungs is black, but when the oxygen acts upon it it becomes red, and sends it through the veins to impart life and animation. The black blood is produced by carbon, and imparts the blackness which we see in the face of persons who lose their lives by suffocation, because the oxygen was not allowed to reach the lungs to purify it. When we send out the air from the lungs, we do not send it in the same manner as we inhaled it, for when exhaled it is as deadly a poison as arsenic or corrosive sublimate. The lecturer showed this by experiments, and filled a vase with his own breath, in which a lighted candle would not live. It was such air as killed persons who went down into wells in the country, or who died when a pan of charcoal was placed in a room. The danger of taking impure matter into the stomach was not so great as into the lungs, for the stomach had power to eject impurities, which the lungs had not. Besides the impure air which we exhale, there are 2,800 pores on every square inch of the surface of the body, and to a body of large size there are 2,590 square inches; and these multiplied make 7,000,000 of pores.

There is a sort of drainage pipe in the body, which sends out matter as well as gas; and this pipe is calculated at twenty-eight miles long. The particles of matter which are sent out, and which do not dissolve, are so numerous, that in China, where the houses are low and a great many persons are in the habit of assembling in one room, it has been discovered, that after fifteen or twenty years, these particles so adhere to the ceiling of the rooms, that the farmers will contract to put up a new ceiling if they are allowed to take down the old one, so valuable has it been found for manure.

## CREEPING PLANTS OF CEYLON.

At Topari the creeping plants are as beautiful as they are various. They cover the stems of the loftiest trees, shoot across the top branches, extending from branch to branch and from tree tree, over a continuous extent of wood; bordering the forest paths, roofing with verdure and bloom the entire thicket, completely shutting out the intense light and heat of the blazing sun—producing a profuse, varied and rich mass of the most luxurious green tints, the intense light shining through the transparent leaves; while their graceful tendrils hang in wreaths, festooning nature's loveliest arbors—drooping across in garlands of gorgeous blossom, red, yellow, purple, blue and white; some of them small and tiny, others as large as a peony rose, enclosing you within a thin partition of quivering leaves, through which the parrot and the humming bird are constantly fluttering, also the graceful ribbon bird, which is white, with a white tuft on the head, and two long feathers growing out of the tail, closely resembling the bird of paradise.—Some of those creeping plants are of large dimensions, and are called jungle-rope, being as thick, and as closely twisted as a cable, which it closely resembles.

## LOVERS OF CANDIES BEWARE!

In an article in the "Household Words," we find the following statement:—"British confectionary contains plaster of Paris, chalk, starch, sulphate of barytes, bronze, copper leaf, leaf tin, arsenite of copper, carbonate of copper, verdigris, chromate of lead, orpiment, oxy-chloride of lead, read lead and vermilion. The minerals here named are all poisonous. Our bright yellow comfits contain a dangerous and insidious poison—chromate of lead, which is used also largely for giving the slight yellow tint to ginger lozenges. Let the British consumer who has often, during the winter season, a ginger lozenge in her mouth not be surprised at a slight failure in her health. The emerald green sugar plums and ornaments in sugar have been colored with a still more dangerous poison, arsenite of copper. Dr. Lethby states that to his knowledge, there has been several cases of fatal poisoning during three years, traced to the use of confectionary made and coloured in this country."

## THE USES OF SLATE.

A few years ago, people who knew nothing of slate but as a material to roof houses with and do sums upon, were charmed to find it could be made to serve for so large a thing as a billiard table. For billiard tables there is nothing like slate, so perfectly level and smooth as it is. Then fishermen found there was nothing like slate for their slabs (till they are rich enough to buy marble); and farmers' wives discovered the same thing in regard to their dairies. Plumbers then began to declare that there was nothing like slate for cisterns and sinks; and builders, noticing this tried slate for the pavement of washhouses, pantries, and kitchens, and for cottage floors; and they have long declared that there is nothing like it; it is so clean, and dries so quickly. If so,

thought the ornamental gardener, it must be the very thing for garden chairs, summer houses, sundials, and tables in arbours; and it is the very thing. The stonemason was equally pleased with it for gravestones. "Then," said the builder again, when perplexed with complaints of a damp wall in an exposed situation, "why should not a wall be slated as well as a roof, if it wants it as much?" So he tried; and in mountain districts, where one end of the house is exposed to beating rains, we see that end as scaly as a fish—slated like its own roof. Thus it is with small houses erected for the business at the quarry in Valencia; the steps leading up to them are of slate; and the path before the door are paved with slate. We look in upon the steam engine, and we observe that the fittings of the engine house are all of slate, so that no dust can lodge and no damp can enter.—*Dickens's Household Words.*

## EXPANDING THE CHEST.

Those in easy circumstances, or those who pursue sedentary employment within doors, use their lungs but little, breathe but little air in the chest and thus, independently of positions, contract a wretchedly small chest and lay the foundation for the loss of health and beauty. All this can be perfectly obviated by a little attention to the matter of breathing. Recollect the lungs are like a bladder in their construction, and can stretch open to double their size with perfect safety, giving a noble chest and perfect immunity from consumption. The agent, and only agent required, is the common air we breathe; supposing, however, that no obstacle exists, external to the chest, such as twinning it around with stays, or having the shoulders lie upon it. On rising from your bed in the morning, place yourself in an erect posture, with your shoulders entirely off from the chest, then inhale all the air you can, so as to fill your chest to the very bottom, so that no more air can be got in; then hold your breath, and throw your arms off behind—hold your breath as long as possible. Repeat these long breaths as many times as you please. Done in a cold room is much better, because the air is much denser, and will act much more powerfully in expanding the chest. Exercising the chest in this manner it will become flexible and expansible, and will enlarge the capacity and size of the lungs.—*Scientific American.*

## COUCH OR TWITCH GRASS.

There are three or four conditions in which it does not seem to thrive. It appears, nevertheless, to possess strong assimilative powers; for on soils too poor for wheat or oats it will be the most luxuriant; and when both co-exist in a soil decidedly unequal to the production of both, the couch will eat out the corn. These powers seem to come into operation soon after harvest in a still more vigorous degree; for it seeds at harvest, and, unlike the wheat plant, continues to live under ground, spreading ten thousand filaments in every direction. Now though it perfers a porous soil, still it must have root-hold, and if disturbed in autumn immediately after harvest, it never



makes much headway. To scarify therefore below the roots after harvest, even if nothing more is done, stops their progress, destroys many during the winter frosts, and materially assists the cleaning in the spring. Hoeing in summer or even horsehoeing seems to be of no use whatever, but is generally the reverse: it divides and transplants the roots in a thousand pieces. Perhaps the only way to eradicate couch is to grow fewer crops of corn. If the seeds, instead of being sown with wheat or oats, be broken up, and grown as bastard fallow in the second year of their growth after midsummer—a time when they are of little real use as food for the stock—the enemy may not only be arrested, but almost extirpated, and the soil will be free from those crops which foster the shedding of the seed of the couch; a state of things indispensable to the eradication of the weed from the soil.

POWER OF THE ENGLISH LANGUAGE.

It used to be said that if Athens and Lacedæmon could make up their minds to be good friends and make a common cause, they would be masters of the world. The wealth, the science, the maritime enterprise, and daring ambition of the one, assisted by the population, the territory, the warlike spirit, the stern institutions of the other, could not fail to carry the whole world before them. That was a project hostile to the peace and prosperity of mankind, and ministering only to national vanity. A far grander object, of more easy and more honorable acquisition, lies before England and the United States, and all other countries owning our origin and speaking our language. Let them agree not in an alliance offensive but simply never to go to war with one another. Let them permit one another to develop as Providence seems to suggest, and the British race will gradually and quietly attain to a pre-eminence beyond the reach of mere policy and arms. The vast and ever increasing interchange of commodities between the several members of this great family, the almost daily communication now opened across, not one, but several oceans, the perpetual discovery of new means of locomotion, in which steam itself now bids fair to be supplanted by an equally powerful but cheaper and more convenient agency, all promise to unite the whole British race throughout the world in one social and commercial unity, more mutually beneficial than any contrivance of politics.—*London Times*.

STRENGTH OF INSECTS.

In a volume published by Van Voorst, on the Natural History of Animals, several illustrations are given of the super-herculean strength with which the commonest insects are endowed.

The common flea, as every one knows, will without much apparent effort, jump two hundred times its length, and several grasshoppers and locusts are said to be able to perform leaps quite as wonderful. In the case of the insect they scarcely excite our notice; but if a man were coolly to take a standing leap of three hundred and eighty odd yards, which would be an equivalent exertion of muscular power, perhaps our admirers of athletic sports might be rather startled at such a performance.

Again, for a man to run ten miles within an hour would be admitted to be a tolerable good display of pedestrianism; but what are we to say to the little fly observed by Dr. Delisle, which ran nearly six inches in a second, and in that calculated to have made one thousand and eighty steps? This according to Kirby and Spence, is as if a man whose steps measured only two feet, should run at the incredible rate of twenty miles in a minute. Equally surprising are the instances of insect strength given by Mr. Newport.

The great stag beetle, which tears off the bark from the roots and branches of trees, has been to gnaw a hole, an inch in diameter, through the side of an iron canister in which it was confined and on which the marks of its jaws were distinctly visible.

The common beetle can without injury, support and even raise great weight, and make its way beneath almost any amount of pressure. In order to put the strength of this insect-Atlas to the test, experiment have been made which prove that it is able to sustain from twenty to thirty ounces, a prodigious burden when it is remembered the insect itself does not weigh as many grains; in fact, once more taking man as a standard of comparison, it is as though a person of ordinary size should raise and get from under a weight of between forty and fifty tons.

LIME IN SOILS.

The question—How much lime is needed in soils? is an interesting one. Very erroneous ideas formerly prevailed in reference to this subject. It is not many years since the idea was strenuously advanced, that the application of lime was all that the soils of Massachusetts needed, to make them produce wheat. Chemistry has rendered good service in this case. Of late, it has been ascertained that some of the best wheat soils,—those of Seneca Co., N. Y., for instance,—contained less than one per cent. of lime. So far as examinations have been made there are but few soils in this State that do not contain as much. A leading article in the *Genesee Farmer* for March, states that “the instances are rare where one per cent. of lime exists in the soil, that the addition of more is beneficial, or would pay the cost of application.” It is stated that in the wheat district of Wheatland, Monroe county, N. Y., the soil does not contain over two per cent. of lime, and that on the noted wheat farm of Gen. Harmon, in that district, the use of lime does not increase the crop.—*Ibid*.

RAW AND COOKED FOOD.—CARROTS FOR HORSES.

In relation to the statement that cooked meal is nearly three to one better than raw meal, for hogs, which we copied some time since, from a speech of Professor Mapes, Mr. Levi Durand writes us, that his father was in the habit of cooking food for hogs for twenty-five years, and that twenty-five per cent. was as much as he deemed to be the saving by the process. Hon. John Brooks, Princeton, in a letter to the Hon. J. W. Proctor, Danvers, (published in the *N. E. Farmer*), says—“The statement that 50 per cent. is saved, by cooking meal for hogs, is beyond my experience, which is not more than 25

per cent. saving in corn, rye, barley, or out meal, and 15 per cent. saving in cooking roots." Prof. Mapes, in his address at Worcester, said—"When a horse is fed in part on carrots, that shells of oats and pieces of cut hay will not be found in his dung." In regard to this, Mr. Brooks says—"It is not true that when a horse is fed in part on carrots, that shells of oats and pieces of cut hay will not be found in his dung. I have fed a colt this winter, (coming three years old) a portion of the time, on cut hay, with one peck of carrots daily, and a part of the time on cut hay alone, and can discover no difference in his excrement, it being equally chaffy when fed on hay and carrots as when fed on vay only."—*New England Farmer*.

#### NEW PATENT SOWING MACHINE.

On Saturday last we were invited to witness a trial of Emery's Sowing Machine, by Mr. J. A. Bruce of James street, and were much pleased with its performance. It is certainly the simplest most efficient and complete thing of the sort we have yet seen. For Indian Corn or any other kind of seed requiring to be sown in drills, and at regular intervals, it is invaluable. By a contrivance which we shall attempt to describe, it will deposit one seed or any number of seeds, at any required distance, from one foot to eight feet apart, with mathematical accuracy making the hole for its reception, and covering it up at the same time, by only once passing over the ground. It is shaped like a plough, and drawn in the same manner, having a hopper to receive the seeds over the rest. The bottom of this hopper is closed up by a hollow cylinder, with one small hole in the side, and under the beam is placed a broad fellied wheel, on the axle of which is a circular plate, on which is cast a number of bevels which resemble concentric circles; a small horizontal spindle connects this wheel with the cylinder under the hopper, and the outer and connecting pinion is made to slide, so as to fit in any of the concentrics, and determine the speed at which the cylinder revolves. Of course, when the open side is turned upwards, it receives the seed out of the hopper, and when it turns down, drops it. The furrow is made of a shoe-like coulter, and filled up again by a roller behind. By this contrivance, it will be seen, that it matters not at what speed the machine is drawn at, the distance at which the seed is required to be sown is always uniform. It is really a neat and excellent article, and the price is, we understand, only \$20. Our agricultural friends should call and see it, it is really worthy of their attention.—*Hamilton Canadian*.

The Highland Society has come to the conclusion that it is not now necessary to hold general shows in each year; but that every purpose of utility may be served by holding them at intervals, as in every second or third year.

**AGRICULTURAL STATISTICS.**—The Highland Society propose to select three counties in which to collect agricultural statistics experimentally, and the Board of Trade has consented, but requires an estimate of the probable cost of the experiment.

## Poetry.

ELIZA.

BY H. J. DANIEL.

"She thought she heard the trader make an offer for her boy,  
could she be mistaken?"—*Uncle Tom's Cabin*.

She listens, and her little child is clasp'd  
Still closer to her breast; her heart beats quick,  
And all the mother trembles through her frame.  
What brings the sudden paleness to her cheek,  
And the damp dew upon her matron brow?  
That which no earthly daughter down from Eve,  
Who bears within her arms the pledge of love,  
Can hear, and stand unmoved. What fearful word,  
From human lips can thus tranfix the soul?  
Her boy—her son—her idol to be sold,  
Sold by a brute, by one more brutal bought.  
Go to—thou art no man thy heart is stone—  
Is this a Christian land where prayer to Him  
Whose life was peace, and love to man, is heard?  
Oh! hideous mockery. Is this the spot  
Where Freedom raised her voice and shook a throne?  
She blushes for that banner striped and starr'd  
It is not hers, 'twere insult to her name.  
Talk not of liberty! America,  
Whilst with a brother's blood thy hands are stained,  
And human flesh is "auctioneered away!"  
Denounce not dungeons, or captivity,  
Or Europe's regal despots, while the chain  
Is clanking on ten thousand Africans.  
Still clasp thy boy, fond mother, to thy breast—  
The curse of slavery shall not fall on him—  
The tyrant shall not triumph, God is there.

April 15th, 1853.

I gazed upon the glorious sky  
And the green mountains round;  
And thought that when I came to lie  
Within the silent ground,  
'T were pleasant, that in flowery June,  
When brooks send up a cheerful tune,  
And groves a joyous sound,  
The sexton's hand, my grave to make,  
The rich green mountain turf should break.

*Eryant's Poems.*

## EDITOR'S NOTICES.

**OMISSION.**—In the account of the proceedings of the Board of Agriculture, published in our May number, the name of JOHN HARLAND, Esq., who was in attendance both days, was accidentally omitted.

**J. B.**—The stratum of earth you mention, judging from your description, is most likely shell marl—a substance that is found in several localities. Professor Croft has recently analyzed some specimens from, we believe, the County of Peel, and found them exceedingly rich in lime, with tolerably large quantities of other manuring constituents. We will speak to the Professor about your other enquiry, and write you privately.

**GIGANTIC ASPARAGUS.**—This valuable esculent appears to thrive astonishingly in this country; it requires only ordinary care and no farmer's garden should be without it. Mr. Fleming, Seedsman of this city, sent us a bunch consisting of eleven heads which weighed no less than 15 oz! It was grown in the common way, and cut about the middle of May.



THE FARMER'S JOURNAL AND TRANSACTIONS OF THE LOWER CANADA BOARD OF AGRICULTURE. Montreal: H. Ramsey, May 1853.

The *Agricultural Journal* of Lower Canada has changed hands. It is no longer conducted by Mr. Evans and published by the Agricultural Association. We referred to Mr. Evans's retirement from the post which he has so long and usefully filled, in our last. The *Journal* in its new form is published by Mr. Ramsey, and in his hands we doubt not it will be an efficient auxiliary in the cause of Agricultural improvement. It will, we perceive, contain the transactions of the Lower Canada Board of Agriculture. The first number has been from necessity somewhat hastily got but up, it contains several interesting articles; the size is quarto, each number containing 16 pages, and is sold at the extremely low price of 2s. per annum. Most heartily do we wish our old fellow labourer in its new shape, every success.

A VOYAGE TO CALIFORNIA: With an account of the condition of the Country, &c., &c., by Alfred H. St. Germain, of Toronto. For sale at A. H. Armour & Co., Thos. Maclear, Chas. Fletcher, and the Wesleyan Book Room. Price 7½d.

Those who wish to acquire a knowledge of California, either from motives of curiosity or for more serious and practical purposes, would do well to read carefully this little work, which is the result of personal observation and experience, and appears to be written in a candid and truthful spirit. What is so important for intending emigrants to know, and what ex-parte writers always study to conceal the drawbacks and discomforts incidental to new and distant settlements, the writer of the pamphlet before us, has, as far as his limits would allow, supplied. The reader may safely assume that in auriferous countries, as well as everywhere besides, the old proverb will be found to hold good:—"It is not all gold that glitters."

THE POPULAR EDUCATOR. A. Montgomery, New York: 1853.

We have received from A. H. Armour & Co., of this city, the first number of this serial, which is constructed on an entirely new plan, and most of the articles are written with spirit and ability. It is intended to comprise a series of treatises on science and literature, each number containing several lessons, as for instance, on Geology, Geography, Botany, Natural History, Mechanics, Language, &c. It is published in monthly parts, at the marvellously low price of 7½d. each. We confidently recommend it to families, and young people, who desire an efficient literary scientific guide. *The Popular Educator* is essentially, we believe, an English publication, and, like the "Family Tutor" and similar works, constitute a class of books for the enlightenment and moral improvement of the people, which characterise the present age.

THE CANADIAN JOURNAL AND RECORD OF THE PROCEEDINGS OF THE CANADIAN INSTITUTE. Toronto: Hugh Scobie.

The contents of this truly valuable periodical for May are more than ordinarily interesting. Mr. Justice Draper's address is excellent in its way, and Dr. Scadding's pleasing and beautifully written paper on "Accidental Discoveries" is concluded. A very valuable paper is furnished by Mr. Sandford Fleming, C.E., "On the valley of the Nottawasaga," illustrated by a neatly executed plate, and descriptive woodcuts. We have no space to enumerate even the other excellent articles which the number contains. The publication, whether as regards its matter or execution, is highly creditable to all parties concerned, and is meeting we hope, with the liberal patronage it so justly deserves, from the intelligent and patriotic portion of the public.

#### ADVERTISEMENTS.

##### BUREAU OF AGRICULTURE,

QUEBEC, 28th May, 1853.

HIS EXCELLENCY THE GOVERNOR GENERAL has been pleased to appoint

Messrs. Whitman & Wheelock,

OF NO. 100 FRONT STREET, IN THE CITY AND STATE OF NEW YORK,

To be, the Agents to Receive and Bond, or Pay Duties on all such Goods as may be sent from Canada to the approaching INDUSTRIAL EXHIBITION AT NEW YORK.

#### FRESH GARDEN, FIELD AND FLOWER SEEDS.

THE Subscriber begs to inform his Friends and the Public, that his Stock of Fresh Seeds for Spring sowing is now complete.

The Stock of Agricultural seeds is well selected, comprising a fine Lot of Imported

Purple Top Swede Turnip	Yellow Globe Mangel Wurzel.
Yellow Aberdeen do.	Long Red do. do.
White Globe, and other varieties.	Spring Tares, or Vetches.
White Belgian Carrot.	Red and White Clover.
Long Orange Altringham, &c., &c.	Timothy, and other Grasses.
Field Parsnips.	100 Bus. Good Seed Barley, (weighs 52 lbs. to the bushel.)
Spring Rape & Cow Grass	600 Bus. common Oats.
White Marrow-fat Peas.	100 " Early Ash Top Potatoes.
Blue Imperial	200 " Early June, (a fine sort.
Early and Late Field do.	
Scotch Oats, (imported.)	
White Sugar Beet.	

Price of Potatoes—\$1 per Bushel.

The subscriber has also a full and general assortment of all kinds of GARDEN SEEDS, suitable for the country—a catalogue of which, with directions for sowing seeds, can be had GRATIS on application.

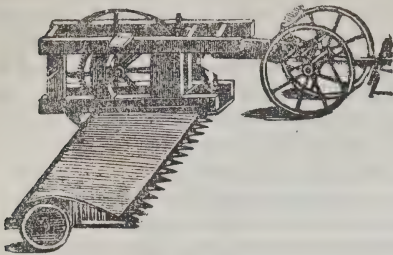
Twenty Packets of choice Flower Seeds will be sent free by Post to any part of the Province, to the address of any party remitting \$1 free of postage.

JAMES FLEMING,  
Seedsman to the Agricultural Association  
of Upper Canada.

Toronto, 24th March, 1853. 149-161

## IMPORTANT TO FARMERS.

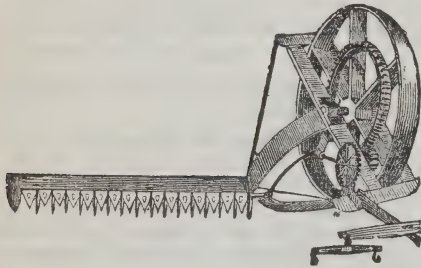
HUSSEY & BURRALL'S



### IMPROVED REAPING MACHINES.

THE SUBSCRIBERS having opened an Agricultural Warehouse and Seed Store in Port Hope, C.W., are now manufacturing the above Machines extensively. Also

KETCHUM'S



### MOWING MACHINE,

On an improved scale of stopping the motion on the knives by means of a lever.

These are the machines which have taken the first Prizes at the New York State Agricultural Test at Geneva last harvest, in competition with *eleven* different kinds of Reapers and Mowers, and they have now become the *standard* and *model* Machines, while others are altering and experimenting with doubtful success.

They are warranted to give satisfaction, and a fair and thorough trial is offered before the sale is made valid.

Any person wishing to purchase one of those Machines can obtain satisfactory information as to their performance and satisfaction by referring to the following gentlemen Farmers, who have used these Machines, and to whom they trust for an impartial repute:—

John Wade, Esq., P. Hope,	Seir VanCamp, Bowman-
Nath. Nichols, Cobourg,	ville.
George Black, "	R. Simpson, "
John Middleton, Clarke,	J. B. Warren, Oshawa,
Z. Pollard, "	Joseph Gould, Whitby,
Sam'l Wilmot, Darlington,	John Cameron, York Mills
John Smart, "	McIntosh & Walton, Tor-
	onto,

And several others whose names are omitted. They also keep on hand the *Plows* which have taken the first Prizes at the Provincial Fair of Toronto, in 1852, (in a variety of 14 different sizes) and have since proved themselves above competition.

Wheat Drills, Seed Sowers, Harrows, and Cultivators for one or two horses, and all manner of Agricul-

tural Implements and Machines perfected for the use of the Farmer, from an Apple Parer to an eight horse Power.

Farm Produce, such as Peas, Timothy Seed, and Clover Seed, taken in exchange for machinery, and a liberal discount for cash. All articles warranted, or price refunded. Farmers wishing to purchase Machines will do a favor by ordering immediately so as to avoid any delay or disappointment.

JOHN RAPALJE & Co.,  
Port Hope, C. W.

Messrs. McIntosh & Walton, of Toronto, are Agents for the above Firm, and have their implements and machines for sale at low prices.

April, 30th, 1853.

3in.

## PURE BRED MALE STOCK,

AT

### PRIVATE SALE AT MOUNT FORDHAM

*Eleven Miles from the City Hall, New York.*

I WILL Sell and Let from 10 to 12 Short Horned Bull Calves; 4 Devon Bulls and Bull Calves, and from 12 to 15 South Down Rams. The Annual Sale by Auction will be omitted this year, as I wish to reserve all the females, having recently purchased another farm, to enable me to increase my Breeding Establishment. My Hog Stock, including all the Spring Litters, are engaged. Catalogues, with full description and pedigrees of the above Bulls and South Down Rams, with the prices attached, can be obtained by the 15th of April next, from the Subscriber, or at any of the principal Agricultural Stores, or from the editors of the principal Agricultural Journals.

L. G. MORRIS.

March 23rd, 1853.

3m

## WANTED,

100 JUNE and DECEMBER Nos. of the "AGRICULTURIST" for 1852. Subscribers who can spare any of the above Nos. will be paid by sending them to this Office.

## The Canadian Agriculturist,

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, to whom all communications are to be addressed, is published on the First of each month by the Proprietor, *William McDougall* at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

### TERMS.

SINGLE COPIES—One Dollar per annum.

CLUBS, or Members of Agricultural Societies ordering 25 copies or upwards—*Half a Dollar each Copy.*

Subscriptions always in advance, and none taken but from the commencement of each year. The vols. for 1849-'50-'51, at 5s. each, bound.

N.B.—No advertisements inserted except those having an especial reference to agriculture. Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.



THE  
**CANADIAN AGRICULTURIST,**  
AND  
**Transactions**  
OF THE  
**BOARD OF AGRICULTURE OF UPPER CANADA.**

VOL. V.

TORONTO, JULY, 1853.

NO. 7.

MEETINGS OF THE BOARD OF AGRICULTURE.

The Board met, pursuant to adjournment, in the City of Hamilton, on Wednesday, June 8th. Members present: E. W. Thomson, Esq., Chairman; R. L. Denison, Esq., Treasurer; Honble Adam Fergusson; Mr. Sheriff Ruttan; John Harland, Esq., and the Secretary.

The minutes of the last meeting having been read and approved, the Secretary read letters from Wm. Matthie, Esq., President of the Provincial Association; David Christie, Esq., M.P.P., and J. B. Marks, Esq., expressing their inability to attend.

The Committee appointed for making the necessary preparations for the Experimental Farm, stated that a team and some implements had been purchased, and that the operations of plowing, grubbing, levelling, &c., had been commenced, and tenders for fencing, advertised.—The work will thenceforth be carried on with all convenient despatch.

Mr. Ruttan having been requested to prepare a plan for a dwelling-house to be erected on the farm, submitted one, which, after mature inspection and consideration, was approved: whereupon it was

*Resolved*.—That the Architect be instructed to furnish specifications of the house, in accordance with the plan now submitted and approved of; and that the necessary steps for the erection of the same be taken without delay.

The Secretary was instructed to apply to the County Council of Wentworth and Halton, for a grant to the funds of the Provincial Association, for the current year.

In the afternoon the Board met the Local Committee, most of the members of the latter being in attendance; W. G. Kerr, Esq., Mayor, presiding. Several matters relating to the arrangements for the next Exhibition were considered, and the reports of sub-committees received. Two localities in the immediate neighborhood of the city were afterwards examined with a view to their adoption as a site for the Show. It was unanimously agreed to accept the one lying between King and York street; the situation is high,

picturesque, and most convenient to the heart of the city and steamboat landing; the ground dry and undulating, and on the whole, exceedingly well suited for the purposes of the Show. About 25 acres are to be fenced in.

In the evening the Board again met and agreed to adjourn to Tuesday, June 21st, at 11 o'clock,—then to meet at their rooms in the city of Toronto.

ADJOURNED MEETING IN TORONTO.

TUESDAY, June 21st.

The Board again assembled this day at eleven o'clock. Members present: E. W. Thomson, Esq., Chairman; R. L. Denison, Esq., Treasurer; Hon. A. Fergusson; David Christie, Esquire, M.P.P.; Mr. Sheriff Ruttan; John Harland, Esq., and the Secretary.

The minutes of the meeting held at Hamilton having been read and confirmed, the Secretary read a letter from J. B. Marks, Esq., expressing his regret that in consequence of important country business he was unable to attend. The Minister of Agriculture was prevented attending, in consequence of official business at the Seat of Government.

Mr. Ruttan having laid before the Board the specification of the plans of a house for the farm, that were approved of at the last meeting, it was,

*Resolved*.—That the Chairman, Treasurer, and Secretary, be authorized to enter into contracts, and take all necessary steps for proceeding with the erection of the house and out-buildings, fencing, &c., on the Experimental Farm, with as little delay as possible; and that they consult such other members of the Board as may be conveniently accessible.

The Secretary read the following letter from Frederick Widder, Esquire, first Commissioner of the Canada Company:

CANADA COMPANY'S OFFICE,  
Toronto, June 10th, 1853.

MY DEAR SIR,—The increased demand upon my time and attention which has taken place, will prevent me giving much of either to the introduction of the Flax Machine throughout the various townships of the Province. I am most desirous that it should be successful, and I therefore propose to present the machine to the Board of Agriculture, with the request that you do will all in your power to promote the project. I had in view in desiring the Canada Company to purchase and send me the most improved Scutching

Machine that could be procured in England. When you pass by my office, we will arrange when and where to send the Machine.

I am, my dear Sir, yours respectfully,

FRED. WIDDER,  
*Commissioner.*

GEORGE BUCKLAND, Esq.,  
*Secr. Board of Agriculture, Toronto.*

*Resolved*,—That the Board thankfully accept the Flax Machine offered by Mr. Commissioner Widder, assuring that gentleman that they will do every thing in their power to forward the important views of the Canada Company, in sending the Machine to this country.

The Board afterwards inspected that portion of the University ground set apart for an Experimental Farm, in company, (by special request,) with David Buchan, Esq., Bursar of the University.—A site for the House and out buildings having been agreed on,—subject to such modifications as subsequent arrangements may render necessary, the Board adjourned to next morning, at 8 o'clock.

WEDNESDAY, June 22.

The Board met at 8 o'clock A. M. The same members present as attended yesterday.

The first business which came up was the publication of the Reports, Prize Essays, and other communications, which are sent to the Board, from time to time. Much of this kind of matter has hitherto been published in the *Agriculturist*, but as materials are increasing, it was felt that a monthly periodical, consisting of only one sheet, would not be adequate, and that an annual volume should be prepared and published by authority of the Bureau of Agriculture. It was, therefore,

*Resolved*,—That the following letter on the subject of publishing reports and transactions, be sent to the Minister of Agriculture; and that the existing arrangements with the proprietor of the *Agriculturist*, be continued to the end of the year, and then to terminate.

To the Hon. MALCOLM CAMERON, &c., &c., &c.,  
*Bureau of Agriculture, Quebec,—*

SIR,—The Board of Agriculture now assembled, in pursuance of adjournment, regret that official engagements have deprived them of the pleasure and advantage of your presence.

Among many important matters at present under consideration, there is probably none which may be attended with more permanent advantage to the Farmers of Canada, or secure greater credit and confidence to the Department of Government, over which you preside, than a satisfactory mode of communicating to Agriculturists, and to all connected with agriculture, the results of those experiments, enquiries, and details, which are procured from time to time, and at present sent out in the *Agriculturist*.

It appears to the Board that, however ably and anxiously conducted a monthly periodical may be, it cannot take the position or serve the important end which a carefully arranged and well-got-up annual volume, published by order of Parliament, would assuredly enjoy. It would be premature at this period to enter upon the discussion of details, but the Board can see no insuperable difficulty in carrying out such a measure, and that with more advantage to the

Agriculturists of Canada, and with high credit to the Bureau, under whose auspices it would be issued.

The Board will therefore anxiously desire to obtain at your earliest convenience, some communications from you upon this subject; and will only add their hearty pledge for a willing co-operation on their part in carrying out a measure of such high importance to the Province.

The Board have therefore appointed a Committee to confer with you on the subject when it suits your convenience to meet them: such Committee to be composed of the Chairman, Secretary, and Treasurer, of the Board.

I have the honor to be, Sir,

Your obedient servant,

[Signed] E. W. THOMSON,  
*Chairman.*

The Secretary having stated that it was not in his power to discharge the increasing duties of the Secretaryship with satisfaction to himself, owing to the multiplicity of other important matters in his hands, it was

*Resolved*,—That Mr. Hugh Thomson be appointed Assistant Secretary until the 25th of March next; and that the sum of £200 be allowed for this duty:—£75 to Mr. Buckland, and £125 to Mr. Hugh Thomson.

With a view of showing our respect for, and interest in, our fellow subjects of Lower Canada, the Board appointed E. W. Thomson, Esq., Wm. Matthie Esq., Mr. Sheriff Treadwell, Baron de Longueuil, John Harland, Richard Jackson and Angus Cameron Esqs., to represent the Board and Agricultural Association of Upper Canada, at the Exhibition of the Agricultural Association of Lower Canada, to be held at Montreal in September next.

It was agreed that £25 be granted for the purposes of the Library, and votes of thanks given to the following gentlemen for donations to the same:—Hon. Adam Ferguson, for two colored engravings, illustrating the points and anatomical structure of the Horse; Wm. McDougall, Esq., for the American Herd Book; Henry Imlach, Esq., for Dixon's System of Agriculture—2 vols. quarto.

The Secretary was instructed to communicate with B. P. Johnson Esq., Secretary of the New York State Agricultural Society, with the view of obtaining Judges on blood Horses and the improved breeds of Cattle.

*Resolved*,—That three auditors be appointed to audit the Treasurers' accounts, and report to the Board at the next meeting: and that G. P. Ridout, Esq., M.P.P., the Chairman, and Secretary be such auditors.

After the disposal of several matters, involving points of mere detail, more particularly relating to the management of the next Exhibition, plans of the grounds &c., having been received from the Local Committee in Hamilton, the Chairman was requested to attend the next meeting of said committee, to make final arrangements as to fencing, buildings, and other necessary preparations for the approaching Show in October.

The Board then adjourned.

[Signed] E. W. THOMSON,  
*Chairman.*



REPORT OF THE COUNTY OF ESSEX AGRICULTURAL SOCIETY, FOR 1852.

The Annual Meeting of Essex County Agricultural Society was held in the Court House, Sandwich, on Saturday, Feb. 19, 1853. John G. Buchanan, Esquire, *President*, in the chair. The minutes of the previous meeting were read and adopted; after which the Board of Directors and officers brought forward their Annual Report, which was read by the Secretary and adopted.

REPORT.

We, the Officers and Directors of Essex County Agricultural Society, would beg leave to report (as required by the Agricultural Act passed the present session of Parliament) for the information of the Society at its Annual Meeting, and also for the Board of Agriculture for U. Canada. The following documents marked in order, will shew the Society's proceedings and transactions for the past year.

No. 1, The names of members and the amount of their several subscriptions.

No. 2, Prize list, being the account of Premiums awarded to animals and various other articles at the Society's Fall Fair and Show, held at Amherstburgh in October, 1852.

No. 3, A detailed statement of the receipts and disbursements of the Society during the year 1852, together with the reports of Township or Branch Societies in this county for the said year.

Your Board would further remark that the operations of the County Society have, during the two years of its existence, been entirely confined to the awarding of premiums for the best articles of agricultural produce; they have not appropriated any money for the purchase of improved stock, as this seems to be the peculiar province of the Township or Branch Societies, as will appear from their Annual Reports; all their efforts are directed in the way of procuring the most improved live stock. As an illustration of the great attention paid to the improvement of cattle in the several townships of this county, they carried off the highest prizes awarded to foreign stock at the State Fairs of Ohio and Michigan.

What would appear to be the interest of this Society would be the offering of premiums for the best cultivated farms or fields that yields the greatest remuneration to the farmer. Such an object might inspire a spirit of rivalry among our farmers, and in some measure compensate for the absence of a model farm which is scarcely attain-

able in this sparsely settled country: it is very doubtful whether farming conducted on a scientific basis, as performed on model farms would be appreciated in this county, owing to the great want of education among a portion of the farming community. Education is the basis of all enterprise and improvement; we would, therefore, hail as a valuable auxiliary to the improvement of Agriculture, the contemplated establishment of Township Libraries by the Chief Superintendent of Education, and also the perfecting of our common school system, so that education may come within the reach of all: and only a few years can elapse before the younger branches of our farming community will be able to lay hold of all the improvements going on around them, and also combine theory with practice in such a manner that Essex will come up alongside of those counties which are already so far advanced in agriculture.

Your Board would remind the Society that laxity in the attendance of members renders such Societies as this very inefficient. When the business of the Society is conducted by a few of its principal officers, it does not give such general satisfaction; neither is the Society answering the end for which it was established.

We would impress upon our successors in office the absolute necessity of attendance to this duty as such, and make this Society something worthy of being appreciated by the farmers of Essex. We possess a soil and climate unsurpassed by any locality in British North America, and it only requires intelligence and energy to develop the resources we have at our command. Let this Society act in conjunction with its branches in the surrounding townships, as the hand-maid of the farmer in developing the riches of his soil, and Essex will stand side by side with its sister Societies in other parts of the Province; and at no great distant day put in its claim for the Provincial Exhibition to be held on the Banks of the Detroit.

In concluding this Report your Board would beg to call the attention of the Society to the receipts and expenditure of the last year, and it may form a question for consideration whether it is beneficial to appropriate the entire revenue of the Society for premiums, in the manner we have been in the habit of doing. The purchase of choice seeds, and as before mentioned, the cultivation of the soil, might command the attention of the Society with equal advantage. However, these are subjects for the future action of the Society.

Our term of office has now expired, and we cheerfully resign our stewardship to our successors in office by wishing them all success.

Dr.  
Essex County Agricultural Society, 1852, in Account  
Current with Isaac Askew, Treasurer.

To Cash paid Isaac Askew for services in establishing Township Societies.	£15	0	0
" Cash paid Premiums at Fall Fair...	100	15	0
" " Expenses of Fair.....	10	2	6
" " paid to John Prince for Foreign Seeds.....	9	11	1
	£135	8	7

Cr.			
By Balance on hand from 1851.....	£14	12	9
" Donation from Isaac Askew.....	5	0	0
" Society's Government Grant.....	62	10	0
" James Dougall, District balance.....	25	0	0
" Members' Subscription.....	25	10	0
" Balance due Treasurer.....	2	15	10
	£135	8	7

OFFICERS OF ESSEX COUNTY SOCIETY FOR 1853.

GEORGE BULLOCK, Esq., Sandwich, *President*.  
JAMES DOUGALL, Esq., *Vice President*.  
Col. JOHN BRUSH, *Vice-President*.  
ISAAC ASKEW, *Treasurer*.  
ALEXANDER BARTLETT, *Secretary*.

*Directors :*

John G. Buchanan, Alexander Whitson,  
Thomas Salmon, Josiah Strong,  
Leonard Wigle, William Sanford,  
John Maloney.

TOWNSHIP BRANCH SOCIETIES.

*Colchester.*

This Branch in 1852, numbered 75 members, who subscribed £18 10s. The total receipts for the year 1852, amounted to £143 1s. 5½d., and the disbursements to £139 11s. 11d., leaving a balance on hand of £3 9s. 6½d. The Society has stock on hand consisting of one Stallion, two Devon Bulls, and three Durham Bulls, in connection with the purchase and keeping of which, a considerable portion of the expenditure of the Society is incurred.

The Society held their annual meeting on Saturday the 15th day of January 1853, when the following persons were elected as officers for the ensuing year:—

GORDON BUCHANAN, *President*.  
SIMON WRIGHT, *Vice-President*.  
SCHUGLER ALARICH, *Secretary*.  
JOHN R. PARK, *Treasurer*.

*Directors :*

Charles W. Cornwall, Morgan Balawen,  
John S. Reasdale, William McLean,  
George Wright, John Arner,  
John Wiggle, Jacob Arner,  
Michel Wiggle.

*Gosfield and Mersea Branch.*

This Society in 1852 had 123 members paying 3s. each. By the report submitted at the annual meeting on January 25th, 1853, it appears that there was no such thing as a good stock of horses in the township at the commencement of the

year. The Society had expended during the year £67 10s. in the purchase and keeping of two Stallions, and had also expended £7 10s. in the purchase of a young Bull. The total receipts of the Society for the year 1852 were £123 5s. including a sum of £72 received from the use and subsequent sale of the two Stallions. The total disbursements, including purchase and keep of horses and bull, amounted to £78 8s. 4½d. leaving a balance on hand of £44 16s. 7½d.

Officers for 1853 :

JAMES KING, Gosfield, *President*.  
L. NIGHTINGALE, Kingsville, *Vice-President*.

*Directors :*

Wm. Sandford, Wm. Hooper,  
Theodore Wigh, Wm. Drake.

*Malden and Anderdon.*

This Society was re-organized under the new Act in 1852, and in that year numbered 81 members, subscribing 5s. each. The total expenditure of the Society for the year 1852 was £69 15s., of which £66 was in the keeping and travelling of a stallion owned by the Society. The total receipts were £82 4s. 6½; £9 5s being realized from use of stallion. Balance of cash in hand, £12 9s. 6½d.

OFFICERS FOR 1853.

JOHN PATON, *President*.  
THOS. BOYLE, *Vice-President*.  
JOSEPH GRAVELINE, *Do. Do.*  
HENRY WRIGHT, *Treasurer*.  
ALEX. BARTLET, *Secretary*.

*Directors :*

John Maloney, John Dall,  
William Marlyee, Jonas Fox,  
Theo. Park, Isaac Askin,  
Jas. Hunt.

*Rochester, Maidstone and Tilbury East  
Branch.*

The Directors of this Branch Society at their Annual Meeting on January 9th 1853, submitted report from which the following are extracts:—

"As this is their first report since their organization as a Society, and as their means the past year were limited to the amount raised by themselves, and the very small additional amount received as their proportion of the Government grant to the United Counties of Essex and Lambton, it has precluded the possibility of doing more than to give the matter a commencement in this section of the country; but they hope, and they think they are warranted in entertaining such hope, that their operations the present year will begin to make themselves felt advantageously.

"Agricultural operations in this section of country, are comparatively in their infancy, the lands to be operated upon being within these very few years wrested from the native forest. We have amongst us no capitalists, but men only of energetic industry and limited means, each working his 100 acres or thereabouts, according to his own ideas of the greatest advantage to be derived therefrom. Still the country has rapidly improved and is improving, and without doubt will eventually become a much prized district for



agricultural purposes. The quality of the land is generally good, some of it first rate, with a fine and heavy growth of mixed timber, rather too level in its general formation, making drainage the most difficult and expensive operation to be undertaken.

"The stock at present to be found amongst us, with few exceptions, is such as is usually found where no general effort has been made for its improvement by the introduction of improved breeds; but we trust a difference in this respect will soon be seen, and that large benefits will accrue to the farming community generally, from the formation of this Society.

Of necessity there could not this first year be anything like an exhibition, they have therefore nothing to report under that head. They have from time to time held meetings as their affairs required, and have agreed to and passed a Constitution, binding themselves together as a Society.

"They have also contributed as largely as their funds warranted, towards the *Canadian Agriculturist*, and this year hope to extend their contributions, so that it may be placed in the hands of every member."

The Society in 1852 consisted of 82 members, who subscribed the sum of £21. The total receipts in 1852 were £50 8s. 2d., and the expenditure £22 17s. 7d., leaving a balance on hand of £27 10s. 7d.

The following is a list of the officers elected for 1853:—

WM. F. WILSON,	<i>President.</i>
ROBT. TAYLOR,	<i>Vice-President.</i>
JOHN MURRAY,	<i>Secretary.</i>
EDMUND SMITH,	<i>Treasurer.</i>

Address for all, Belle River Post-Office, Maidstone, C. W.

#### *Sandwich Branch.*

The Directors of this Society make the following Report:—

"To the Secretary of the County Agricultural Society of the County of Essex.

"The Agricultural Society of the Township of Sandwich for the past year has done little or nothing for the advancement of agriculture in this Township, in consequence of not having been regularly organized; and not having had sufficient funds in hand which might be applied for agricultural purposes.

The present year, however, seems to indicate more favourable results, as the farmers generally evince a desire to become members of the Society, though not to such an extent as might be supposed in such a large and thickly populated Township as this.

"The Society, (as soon as sufficient funds are in hand) intends to purchase a Lower Canadian Stallion for the use of the Society, and it is expected that such can be done during the present spring; though from the fact of the Municipal Council of this Township having passed a By-law allowing horses, cattle, &c., of inferior breed to roam at large, it is feared the possession of a stallion will not benefit the Township.

"Very little can be said on behalf of the agriculturists of this Township; but an Agricultural

Society being now formed on a good basis will, it is hoped, create a fresh energy among the farmers, by the introduction of a superior stock of horses, cattle, sheep, &c., as well as a good quality of grain of different kinds.

The amount of money now in the hands of the Treasurer is £42 12s. 5d.

The Society in 1852 consisted of 90 members, who subscribed £41 10s. 6d., towards the funds of the Township Society, and £18 15s. towards the County Society. The Society gives no further statement of its receipts and disbursements. The following are the officers for the current year:—

FRANCOIS CARON,	<i>President.</i>
THOMAS WOODBRIDGE,	<i>Vice-President.</i>
DENIS MOYNAHAN,	<i>Secretary.</i>
WILLIAM HUNT.	<i>Treasurer.</i>

#### *Directors:*

Thomas McKee,	James H. Wilkinson.
Arthur Rankin,	S. S. McDonell,
Dominique Langlois,	Charles Hunt,
Denis Downing,	Antonie Jannisse,
W. P. Vidal.	

#### *Collectors:*

John McCrae, Leandre P. St. Amont, Edward Boismier, Thomas McKee, H. C. Guillot, P. H. Morin and Denis Downing.

#### REPORT OF MIDDLESEX AND ELGIN COUNTY AGRICULTURAL SOCIETY, FOR 1852.

The Board of Direction for the Agricultural Society of the united counties of Middlesex and Elgin, beg to submit to the Board of Agriculture for Upper Canada, the following REPORT:—

In reviewing the operations and results of the Society for the year which has now expired, your Board has the pleasing satisfaction of being able to state that under the fostering blessing of Heaven, and with the zealous and untiring co-operation of the members of the Society, the past year has been one of unprecedented prosperity. The various but yet concurring influences brought to bear on the Society through the county, have had the gratifying effect of stimulating each other in support of the great and vital operations of agriculture.

The agricultural, professional, mechanical and laboring classes, of the inhabitants of these counties have with praiseworthy zeal striven to outvie each other in their generous support of this great interest; indeed, so much so, as to induce your Board, in the year 1851, to apportion the sum of £30 to assist in defraying the expenses of an Exhibition for works of art and mechanism in conjunction with the Annual Show of the Society; and which in skill and utility, far exceed the most sanguine expectations. Owing to unforeseen difficulties in awarding Diplomas as certificates, and triumphs of successful competition, the money still remained with the Treasurer of the

Board until recently, when, by its order, it was paid over into the hands of the Treasurer of the Horticultural and Mechanical Association of London, as a legitimate application of its original intention,—and your Board not only feels great pleasure in the commencement of a kindred institution, but most heartily wishes it every success in the race of improvement.

It is with pleasure your Board has to state, that the influence of this Society has not only been seen, but is being felt, throughout these united counties. Several of the townships have formed Societies of their own, in connection with the parent institution, and with their active machinery at work have shown that a separate, and yet harmonious emulation amongst them, has produced the happiest results.

During the last year two more townships have organized Societies in localities, where your Board did not anticipate so warm a feeling in the general cause, and from the inspection of the subscription lists furnished, it is evidently shown they do not intend to be last in the race of general improvement.

As the present age is preeminently one of practical benefit, where facts, figures, and material prosperity, stand out in bold relief with the sentimentalism of the last century, and seems destined, in a happy combination with the cultivation of the human mind, to elevate the great mass of society, in the enjoyment of material comfort, and the refinements of civilization, your Board cannot but congratulate the farmers of Middlesex and Elgin on the advance which they have made in these essential elements of improvement in rural life, as will be more fully seen by a reference to the different schedules now submitted.

In schedule No. 1, as reported by the Secretary, it will be seen that the names of thirteen subscribers are reported which are not accounted for by the Treasurer; the supposed discrepancy arises from that number not having paid their subscriptions at the time the Treasurer closed his account. But taking the lesser number of 146, as an index to the interest taken by the united counties in this Society, in addition to the large number of 813 subscribers in the different township societies, it must strike the most casual observer that the interest in the Societies' welfare is rapidly on the increase. In schedule No. 2 it will be seen that your Board has paid the large sum of £561 9s. 4½d. for Premiums and Township Grants, including a few smaller items for expenses, leaving a balance of £82 19s. 1d. in the Treasurer's hands.

In schedule No. 3 will be found a statement of the different sums of money received and paid to the respective Township Societies.

In concluding its report, your Board feels it would be wanting in its duty, were it not to state the proud satisfaction on which it dwells, while reflecting on the past and present position of the agricultural interests in the united counties of Middlesex and Elgin.

Scarcely thirty years ago the ground on which we stand was a wilderness, traversed by the panther and the bear, and now is to be seen a city in embryo, containing upwards of 7,000 inhabitants, with a surrounding country fast rising to be the most populous in western Canada. At that period the Indian almost alone trod the desert stealthily in search of his game: now the sound of the axe, the driving of the plough, and the busy hum of industry generally, is heard and meets the eye at every turn. It has often been said that the peninsula on which we stand is the garden of Canada; and how truly! The results of the last year's agricultural industry will show.

By the Enumerator's return for the past year, we have a statement which must not only astonish and stimulate, but captivate. The products and personal property of the agriculturists of the county of Middlesex, amounts in value (and that within what the markets at this time realize) to the enormous sum of £614,856, and upwards. If such has been its progress for the last generation, what may not be expected in the next? And more especially so while we witness the fast spreading conviction, entwining itself with the feelings and habits of the people of this country, that their own and country's welfare depend upon the permanent success which agriculture can command: and that other and minor interests will advance or recede in proportion with it, as enlightened and patriotic, or selfish and contracted legislation may direct. And it is in the opinion of this Board a matter of deep regret, that its action should be again disturbed by Legislation, the effects and influence of which have yet to be tested by another year's probation. But your Board would fain hope that the results may not only show a continued prosperity, but especially to this Society, over which it has had the honor to preside; and that its members may have the proud satisfaction of pointing to the united counties of Middlesex and Elgin as the garden—and the most productive and prosperous garden—in United Canada.

All of which is most respectfully submitted.

THOMAS C. DIXON,

*Chairman of the Board of Directors.*



Dr.			John Stiles, Esq., Treasurer, in account with the Agricultural Society of the United Counties of Middlesex and Elgin.			Cr.		
1852.		£ s. d.	1852.			£ s. d.		
Feb. 6	To balance in hand from the late County of Middlesex Agricultural Society ....	151 16 5½	March 17	By paid Mr. Farley for the purpose of giving notice in the Provincial Gazette in reference to Agricul. Land				
" "	To amount received in subscriptions from members of U. Counties Middlesex and Elgin Agricultural Society, to 6th Feb. 1852	32 15 0	April 20	" Premiums at Spring Exhib.		2 10 0		
May 1	To amount recd. from Township of Malahide Branch.	51 5 0	May 15	" Constable for attendance Show day .....		29 5 0		
" "	" " St. Thomas "	20 10 0	Aug. 19	" Thos. Scatchard, Esq., for powers of Attorney .....		0 7 6		
" "	" " London "	31 7 6	" 28	" Commission to W. Hedge, Esq., Quebec. ....		0 12 6		
" "	" " Westminster "	28 2 6	" "	" Treas. Township of Westminster Branch .....		45 2 4		
" "	" " Adelaide "	17 10 0	" 30	" Secretary Prov. Association, Draft and Postage..		25 1 9		
" "	" " Williams "	20 7 6	Sept. 1	" Treas. Township of Malahide Branch .....		82 4 3¼		
" "	" " Metcalfe "	19 10 0	" 4	" " Metcalfe Branch		31 5 7½		
" "	" " Bayham "	17 10 0	" 7	" W. Sutherland for Printing		3 12 3		
June 30	" Arrears due the Middlesex Agricultural Society ...	1 5 0	" "	" Treas. Township of London Branch. ....		50 6 9½		
Aug. 28	" Amount received from the Provincial Government, being Annual Grant in support of Agricultural Societies .....	250 0 0	" "	" " Bayham Branch.		28 1 5½		
Oct. 18	" Amt. of Premium awarded Mr. Joseph Lamb for the best Span of Mares, and not paid him, he not being qualified to compete for a Premium .....	1 5 0	" "	" St. Thomas "		32 17 9½		
1853.			" 11	" Premis. for Fall seed-wheat bills, &c. ....		0 10 0		
Jan. 27	" Amount returned to Treas. being balance in hand after defraying expense of Notice of Application to Provincial Parliament respecting Agricultural Grounds in the Town of London, by Secretary...	1 4 6	" 18	" D.W. Hart, printing to date		7 15 4		
			" 20	" Treas. Township of Williams Branch .....		32 13 8¼		
			Oct. 5	" F. Talbot for Printing .....		1 10 0		
			" 7	" Treas. of Adelaide Branch		28 1 5½		
			" 9	" 1 Delegate and 3 Judges' expenses to Prov. Show at Toronto and back....		16 0 0		
			" "	" Premis. at Annual Exhib....		81 5 0		
			" "	" James Thompson for Cedar Poles .....		0 15 5		
			" "	" Luke Lukes for cleaning old Market House. ....		0 10 0		
			" 16	" Peter McCann and 4 Constables for attendance on the day of Exhibition....		1 5 0		
			" 23	" Mr. Whittemore for attendance at Show Gate ....		0 5 0		
			" 30	" W. Williams, putting up bills, Show Fair. ....		0 7 6		
			Dec. 27	" Draft to purchase 76 copies Agriculturist, postage, &c		9 11 6		
			1853.	" J. Farley, Sec, for services		7 10 0		
			Jan. 27	" J. B. Strathy, extract of minutes of County Council.		0 5 0		
			" "	" J. Brown, Treas. Horticult. and Mechanical Assoc....		24 10 0		
			" "	" Postages and Stationery ..		2 7 2		
			" "	" John Alway, for making and repairing pens, 1852		2 2 6		
			" 29	" John Stiles, Treasurer, for services .....		7 10 0		
				Balance in Treasurers' hands to credit of 1852 .....		561 9 4½		
						82 19 1½		
						644 8 5½		

ABSTRACT.

To amount in Treasurer's hands for the year 1852 .....	£644 8 5½
By amount paid by Treasurer during the year 1852 .....	561 9 3¼
Balance in Treasurer's hands to credit of 1853 .....	£82 19 1½

Schedule, showing the Amount of Money received by the Agricultural Society of the United Counties of Middlesex and Elgin from the Township Societies: the Amount or Portion of the Government Grant paid to each Township Society; also, the Total Amount paid by the Treasurer of the United Counties Society to the Treasurer of each Township Society respectively, in the year 1852.

Name of Township.	Amount paid by Township Societies to the United Counties Society in 1852.	Proportion of the Govt. Grant paid to each Township Society in 1852.	Total amount paid to each Township Society respectively in 1852.
Malahide ....	£51 5 0	£30 19 3½	£82 4 3½
St. Thomas ..	20 10 0	12 7 9½	32 17 9½
London .....	31 7 6	18 19 3½	50 6 9½
Westminster..	28 2 6	16 19 10	45 2 4
Adelaide ....	17 10 0	10 11 5½	28 1 5
Williams ....	20 7 6	12 6 2½	32 13 8½
Adelaide ....	19 10 0	11 15 7½	31 5 8½
Bayham .....	17 10 0	10 11 5½	28 1 5½
	£206 2 6	£124 10 11	£330 13 5

OFFICERS OF THE COUNTY OF MIDDLESEX SOCIETY FOR THE YEAR 1853:

JOHN B. ASKIN, Esq., *President*,  
 THOS. C. DIXON, Esq., M.P.P., *Vice-President*.  
 JOHN SCATCHARD, Nissouri, *do. do.*  
 JOHN STILES, London, *Treasurer*.  
 JAMES FARLEY, London, *Secretary*.

*Directors:*

George Belton, William Elliott,  
 Edward Emery, Alexander Kerr,  
 John Saul, Robert Robson,  
 William Moore.

TOWNSHIP BRANCH SOCIETIES.

ADELAIDE.—This Society was organized on the 30th April, 1852, and consisted that year of 70 members, paying 5s. each. The receipts for 1852, including Government Grant, were £29 6s. 5½d.: and the Disbursements, expended principally in the hiring of Durham and Ayrshire Bulls, amounted to £21 12s. 9d.: leaving a Balance in the Treasurer's hands of £7 13s. 9d. *Treasurer* for 1853, Mr. JAMES KEEFER; names of other Officers not returned.

DELAWARE AND CARADOC.—A Branch Society was formed in these townships on the 26th Oct., 1852, and 87 persons then signed the Declaration, subscribing altogether the sum of £23. This being the first year of the operations of the Society; no further report of receipts and disbursements has been received. The following gentlemen were elected as Officers for the year 1853:

W. LIVINGSTONE, Esq., Caradoc, *President*.  
 H. JOHNSTONE, Esq., Delaware, *Vice-Prest*.  
 HORATIO JELL, do. *Secretary*.  
 DR. A. FRANCIS, do. *Treasurer*.

*Directors:*

Wm. Lee, Caradoc. Major Heyne, Delaware.  
 Brock Burwell, do. Alex. Montgomery, do.  
 J. P. Bateman, do. Gilbert McKay, do.  
 Jos. Seabrook, do. John Woodhall, Kilworth,  
 John Tull, do. Delaware Township.

LOBO.—This Branch Society was organized in January, 1853, and a list has been returned of 139 member subscribing £35. The following is a list of Officers:

	Names.	P.O. Address
<i>President</i> , . . .	JAMES McCOLLOM,	Amiens
<i>Vice-President</i> ,	JOHN ZAVITY,	do
<i>Treasurer</i> , . . .	HUGH CARMICHAEL,	do
<i>Secretary</i> , . . .	ROBERT ADAMSON,	Lobo

*Directors.*

George Alway,	do
Hugh McIntyre,	do
William Morrison,	do
John Lymont,	do
William Wood,	do
Thomas Caverhill,	do
William Jestin,	Amiens
Abraham Niff,	do
John Marsh,	do

LONDON.—This Branch Society submitted their Second Annual Report in January, 1853, with a list of the subscriptions, prizes awarded in 1852, receipts and disbursements, &c. The Society in 1852 numbered 109. The following is an Abstract of their Accounts for that year:—

	£	s.	d.
1851. Jan. 1. Balance in Treasurer's hand,	18	0	10½
1852. Paid by Members,	31	7	6
To amount of Public Money,	18	19	3
Total amount,	68	7	7½
	58	16	3

Jan. 25. Balance in Treasurer's hand,	9	11	4½
1852. By Cash paid at Spring Show Fair,	13	15	0
“ for Printing & Judges' dinners,	0	12	6
By Money too late to return to Govt.,	3	0	0
“ Paid at Fall Show,	35	17	6
By Cash for Judges' dinners,	0	15	0
“ for Printing,	2	6	3
“ to Secretary,	2	10	0
	58	16	3

*President*, . . . GEORGE ROBSON, St. Johns  
*Vice-President*, WILLIAM FRANKS, Elginfield  
*Treasurer* . . . ALEX. MONTGOMERY, St. Johns  
*Secretary* . . . JAMES GOULDREY.

*Directors.*

George Calvert,	William Balkurll,
John Standfield,	Captain Patterson,
Francis Walden,	George Doughless,
Thomas Martin,	John Long.
Robert Fergusson,	

MALAHIDE.—This Township Branch was re-organized under the new Act on the 8th January, 1852. The Society in 1852 consisted of 215 members, who subscribed £54 15s. The total Receipts for the year, including a balance of £57 6s. 9d. on hand from 1851 and the apportionment of the Government Grant, amounted to £149 13s. 6d.: and the Disbursements amounted to £120 15s. 6½d.: leaving a balance in the Treasurer's hands, on the 10th of January, 1853, of £28 17s. 11½d. The Society also had the following property:— 1 stallion, 3 bulls, 24 rams, and



3 boars. Debts due the Society for 4 bulls, sold at six months' credit, in September last, £19 18s. Due for use of Stallion £2 10s. The following is a list of the Officers elected for the current year:

GILBERT WRONG, Esq., *President*; Post Office, Gravesend, C.W.

LEWIS J. CLARKE, *Vice-President*; Post Office, Aylmer, C.W.

PHILIP HODGKINSON, *Secretary and Treasurer*, Post Office, Aylmer, C.W.

*Directors:*

John Marr,	Raymond Vanvelger,
Jacob Burk,	Richard McCurdy,
John Sanders,	Jonathan Thompson,
Charles Ross,	Henry Wolley,
James McLachlin.	

METCALFE BRANCH.—This Society has been in existence 3 years, and made their 3d annual report on the 24th January last. In 1852 it consisted of 60 members, who subscribed £19 10. The total receipts of the society for 1852 were £49 15s. 4½d. and the total expenditure £31 15s. 3d. leaving a balance on hand of £18 0 1½. In concluding their report the directors say:

In a Township second to none in fertility of soil and good grazing capacities in Western Canada, it is to be hoped that the cause of Agriculture will continue to flourish as heretofore, the Rail Roads which are being constructed on either side and almost touching this Township will afford a choice of markets, and it is believed by your Directors that a great change for the better will be realized by the farming community generally, and more particularly by the farmers in this section of Canada; who up to this have been almost without a market. But this state of things is about to be numbered with the past, the wealth and resources of the Country, are being developed, and the time is fast approaching, when the farmers of Western Canada will no longer be considered as but little better than hewers of wood and drawers of water. Officers for 1853:—

ROBERT BROWN,	<i>President.</i>
JAMES CAMERON,	<i>Vice-President.</i>
ROBERT L. JOHNSTON,	<i>Sec. &amp; Treasurer.</i>

*DIRECTORS:*

George Mortimer,	Archibald Walker,
Issac Dickson,	Joseph Ramsey,
William Harris,	Thomas Boyd,
Thomas Hardy,	all to Napier P. O.

WESTMINSTER BRANCH.—This Society consisted in 1852 of 89 members who subscribed £28 2s 6d. The total receipts for the year were £47 15s. 4d., and the total expenditure including prizes at Fall and Spring Fairs, ploughing match, printing expenses &c., amounted to £41 11s 1½d, leaving a balance on hand of £6 4s. 2½d. The following is the list of officers for the year 1853.

RICHARD FRONK,	<i>President.</i>
THOMAS BATY,	<i>Vice-President.</i>
GEORGE MURRAY,	<i>Treasurer.</i>

*Committee.*

John Cochrane,	James Rae,
W. J. Hayton,	A. Kerr,
Wm. Grieve,	W. Beattie Sr.,
Francis Nichol,	John Bogue,
William Murray.	

WILLIAM BRANCH.—This Society numbered in 1852, 63 members, who subscribed £22 7s. 6d. There was paid in premiums during the year the sum of £28 5s. The receipts of the Society for the year amounted to £35 18s. 9½, and the disbursements to £34 16s. 3d., leaving a balance in the Treasurer's hands of £1 2s. 6½d. At the fall Fair in 1852 there were exhibited 58 horses, 71 horned cattle, 96 sheep and 4 pigs. The following are the list of officers for 1853:—

GEORGE SHIPLEY,	<i>President.</i>
ROBERT WAUGH,	<i>Vice-President.</i>
JAMES L. NICHOLS,	<i>Secretary.</i>
HENRY ROUTLEGE,	<i>Treasurer.</i>

*Committee.*

Thos. Routlege,	L. G. Shipley,
John Bell,	William Shipley,
Angus Stewart,	David Stewart,
Arthur Shirwell,	George Robson,
John Dorman.	

ST. THOMAS BRANCH.—This Society has given a full return of receipts from members, and of expenditure in expenses and premiums for the year 1852 but no further report of proceedings. The balance on hand on 1st January, 1852 was

	£66 5 0
Amount received during the year from Subscribers and Treasurer of County Society	£57 12 10
	£123 17 10

*Expenditure.*

Amount paid to County Treasurer	£20 10 0
Various expenses	11 4 6
Amount paid in premiums &c. 1852,	28 15 0
	60 9 6
Balance on hand 1st January 1853,	63 8 4
	£123 17 10

## The Agriculturist.

TORONTO, JULY, 1853.

JULY,—THE FALLOW, &c.

July is an important month to the farmer. Before these remarks reach our readers, the hay making season will have pretty generally commenced throughout the Province, and harvest will very shortly follow. At intervals also during the month the fallow for Fall Wheat will receive attention, and to this subject we propose to devote a few plain practical remarks.

In Canada, as yet, the greater portion of land intended for Fall Wheat is prepared by what is called "summer fallowing," or leaving the land during Spring and Summer without a crop, and giving it several ploughings and harrowings. There are several objects attained by fallowing.

Weeds, if the fallow is properly conducted, are destroyed, the land is reduced to a fine state of tilth, and to a proper condition, mechanically, to receive the seed, and it affords a convenient opportunity of applying the barn-yard manure to the fields. In regard to the influence of the fallow upon the fertility of the land itself, the former popular idea, that after some years' cropping, the soil, like a weary man, or animal, required rest, and received strength by being allowed to lie idle for a season, has pretty nearly exploded, and the generally received opinion now is, that fallowing is beneficial from the superior opportunities it affords of reducing the soil to a fine state of cultivation mechanically, of eradicating weeds, applying the manure, and of getting the seed into the ground in good season. And verging a little upon theoretical ground, it is also believed that the particles of the soil being more thoroughly exposed to the influence of the rains and the atmosphere, become thereby more completely decomposed and disintegrated, that thus what is in part a chemical, and in part a mechanical, amelioration takes place, and that certain chemical or mineral properties are by this process of disintegration, set free from the particles of earth in which they had been locked up, and are made available for future use. There is no actual addition or recruiting of the elements of fertility, received by the soil, except what are administered in the shape of manure, from lying fallow, but a further draft is made upon those which were already present, and they remain in the soil in a condition to be used by the next growing crop. On this point Liebeg says :

"Among the effects produced by time, particularly in the case of fallow, or that period during which a field remains at rest, science recognizes certain chemical actions, which proceed uninterruptedly by means of the influence exercised by the constituents of the atmosphere upon the surface of the solid crust of the earth. By the action of the carbonic acid and oxygen in the air, aided by moisture and by rain-water, the power of dissolving in water is given to certain constituents of rock, or of their debris, from which arable land is formed: these ingredients, in consequence of their solubility, become separated from the insoluble constituents."

"These chemical actions serve to explain the effects produced by the hand of time, which destroys human structures, and converts gradually the hardest rocks into dust. It is by their influence that certain ingredients of arable land become fit for assimilation by plants; and the object of the mechanical operations of the

farm is to obtain this result. Their action consists in accelerating the weathering or disintegration of the soil, and thus offers to a new generation of plants their necessary mineral constituents, in a form fit for reception. The celerity of the disintegration of a solid body must be in proportion to its surface; for the more points which we expose to the action of the destructive agencies, the more rapidly will their effects be produced."

In regard to the *modus operandi* of conducting the fallow, it is pretty generally conceded that it is preferable, especially if the soil be of a tenacious description, or infested with weeds of a troublesome character, to give the first ploughing in Autumn. By this course the soil will receive the benefit of the disintegrating influences of the winter atmosphere. The field should also be turned up with a deep furrow, in order to bring a portion of the subsoil to the air; and it is advisable, in the Fall, to plough into narrow ridges, deepening the dead-furrows, and opening cross-drains through all the low portions in much the same manner as if the field were in crop,—for if a portion of the field lies under water during Winter and Spring, much of the benefit of the Autumn ploughing will be lost, and operations will be retarded in Spring.

About the beginning of June, or as soon as the other work of the farm and the state of the ground will permit, it will be time to give the field the second ploughing. By giving this ploughing in good season, before the weeds have made much progress, the growth of the latter will be pretty well checked; and by proper subsequent cultivation, that desirable result, a clean field, will be obtained. But in order to do the work effectually, care must be given to the cultivation, that the implements are in proper order, the work not done in a slovenly manner, and no space containing the roots of weeds left unturned between the furrows.

It is usual to apply the manure with either the second or third ploughing; and in regard to this, it is very desirable that some more economical mode than that generally adopted, should come into use. The method in most common use in Canada is to throw the manure into large heaps in the barn-yards in Spring, where it undergoes a violent heat, and where it remains till it is convenient to carry it to the field, when it is drawn out and distributed in small heaps over the surface of the field, where it again remains till it is



convenient to scatter it and plough it under. By such a method there can be no doubt that much of the value of the manure is dissipated by the sun and rains, and much of it when ploughed in is dry, coarse, and nearly worthless. A slight improvement upon this plan, and which indeed is adopted by many of our better farmers, is in turning the heap in the barn-yard, before it undergoes too violent a heat, and if possible preventing the rain from washing away the valuable soluble properties, by either having the heap under cover or in such a situation that either the drainage will not escape, or that it may be received in tanks, and again used in dry weather to saturate the heap, or be otherwise rendered available. By the second turning the manure heap becomes of a more even quality for distribution over the field, and while the violent heat of a portion is prevented, the general decomposition of the whole is sooner obtained. A further improvement, although it involves some labor, is in covering the heap when first thrown up, with a few inches, or a foot depth of earth, from some mound, foundation of old fence, or bog, if there be such a thing on the farm. This will prevent the escape by evaporation of valuable properties, and on the subsequent turning, will become incorporated with the heap and add to its value. Then on drawing the manure out to the field, if it be immediately, or as soon as practicable, ploughed under, instead of remaining as is often the case for two or three weeks exposed to the weather, a further saving of its valuable properties is effected.

But having in these few common-place remarks drawn upon all our available space, we must defer further observation to a future occasion.

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THE JOURNAL OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND. Vol. XIII. PART 2. 1852. London; JOHN MURRAY.

This volume contains the usual mass of valuable, practical, and theoretic information for the agriculturist. "Practice with science" is its appropriate motto; and never has there been an age of which this admirable conjunction was so peculiarly the characteristic. In arts—in manufactures—in commerce, practice and science have long been combined, each lending to

the other its light and aid. But in agriculture the earliest of all arts, science has been ignored by empiricism and tradition. Attachment to old methods, old laws and the economics of monopoly have combined to retard improvement. Fortunately, the spirit of the age, as well as the necessities of increasing wealth and population, all tend in the path of progress; so just as the agriculturist was beginning to learn that possibly, by the aid of new exertions, new machinery, and chemical discoveries, he could increase production, the old prop of protection on which he leant was removed, and the impetus of competition and independent exertion given to him in the application of his new discoveries.

That such publications as the journal now before us must tend materially to "speed the plough" cannot be doubted; and the only regret we have is, that it is published at a price so high as to be beyond the means of a large section of the farming class to whom its teachings would be invaluable. In this second part of the thirteenth volume, the "Farming of Cumberland" is continued. Cumberland is famous in many ways; its lakes are not better known for their variety and beauty, than is Cumberland lead celebrated as the best for the pencils which may sketch those fairy scenes. Few of our readers who enjoy the luxury of sea-coal fire require to be told how rich in this valuable mineral is this district, Whitehaven being sufficiently celebrated for the quality and quantity of its coal-fields. It may be pleasant, to learn, that if we receive their coal, they take Irish cattle. Cumberland has been from time immemorial a cattle-breeding country; and in addition to its home breeds, the writer informs us that it imports great numbers from Scotland, Ireland, and the Isle of Man. For such traffic with the North and North-East of Ireland it is conveniently situated, and possesses excellent seaport. Of the various breeds of horses, cattle, sheep, pigs, and poultry, peculiar to the country, and of their treatment, the reader will find accurate details in the Report. We have been particularly interested, and so, probably, will the general reader, with the following account of "The Shepherd's Dog:"—

Well might a popular writer say, "Without the shepherd's dog, the mountainous land in

England and Scotland would not be worth expense. It would require more hands to manage a flock of sheep, gather them from the hills, force them into houses and folds, and drive them to market, than the profits of the whole would be capable of maintaining." And though this may be true as regards the wild and headstrong sheep of the Scottish mountains, it is also correct as applied to our own; and most of the difficulties of gathering and driving will vanish in the presence of a really good dog. The sheep seem to know as if by instinct, before they have been many minutes under the charge of such a dog that all their efforts to break away are fruitless, let the flock be ever so wild and numerous, or the field of operation ever so rugged and unfavorable.

It is surprising to observe what cunning a drove of pure Herdwicks will sometimes exhibit in their endeavors to baffle an ill-trained dog. While the driving or gathering ground is favorable to the dog, all goes on well enough; but no sooner do the wily creatures discover a suitable opportunity, than perhaps one or two break off on one side, and, while the dog attempts to head them, others steal away in different directions on the other side; while the dog attends to them the mischief increases, and nearly the whole flock will disperse, to the utter discomfiture and amazement of the dog; but if at this juncture the tactics of a clever dog are brought to bear on the flock, in an astonishingly short period the whole of them will be subdued and brought into order, and may be driven without difficulty so long as the master-spirit is within call.

Some dogs have the faculty of discovering sheep when buried to a considerable depth under the snow, as happens occasionally. A dog possessed of this quality is of immediate value equal to the amount of the sheep he releases or marks. A single dog has been known to point out unerringly the locality of many scores of drifted sheep in a day, even when several of them were at a depth beyond the reach of a shepherd's snow-pole. In the great Martinmas snow storm of 1897 (by far the heaviest fall within the present century), the writer was personally engaged though very young, assisting to search for and release about 400 sheep, being part of a flock of Herdwicks which had been turned out on the common from the fold late in the evening before the snow began to fall. The darkness prevented them from reaching their known haef; and the storm coming suddenly, and falling very heavily, the poor animals were surprised at a disadvantage, and nearly all were covered up in hollows, under wall, and other places where they had sought shelter. To add to their confusion the wind veered during the night, while the snow was falling, from south-east to north-west, and thus all chance of escape was cut off; for those the first part of the storm had left uncovered were drifted under a still greater depth by the enormous masses of loose snow whirled about by the wind, and blown in exactly the opposite direction to that of the first fall. After a fearful night of tempest, and of useless foreboding on the part of the family, at day break next morning not a sheep of the flock turned out was to be seen, for every one was drifted over, and none

could tell where a single sheep was to be found. All hands were put to work probing in the drifts with long poles, and here and there a few sheep were discovered, after much laborious exertion and dug out. An untutored sheep dog, not quite a year old, was one of the party, with three or four older dogs of the same kind. The older dogs took little notice of what was going on, but the young one began to be very curious about the proceedings, and amid his gambols among the snow, would every now and then return to the working party to peep into and snuff about the holes they made with their poles. In a little time he seemed to take still greater interest in the work, and went from hole to hole, examining and smelling at them as the poles were drawn out. He was purposely unnoticed, to see what the result would be, and to avoid diverting his attention. He remained looking intently into one of the holes after the men had gone some distance; and all at once a new light seemed to break in upon him, and he began to scratch the snow with all his might. This was just what was desired: and when he was seen to be in earnest the men returned and dug down through the drift for seven or eight feet, encouraging the anxious whelp, and deeper than their poles could reach, they found a cluster of five or six sheep huddled close together. When these were released, the dog barked and howled with delight and no doubt the owner and his assistants felt that the sagacious animal was in a fair way to lighten their labors, as well as to save much property which was in imminent risk. From that moment the dog was the principal and by far the most valuable actor. For a while he would insist on helping to scratch out the half suffocated sheep; but as he got to understand the matter, he merely indicated by a few scratches the locality of the buried sheep, no matter how deep they were, and on he went to others, with all the importance of an old hand.

The dog being so anxious, and the peril of delay so great, no cessation of labor was indulged in till evening, when all were obliged to leave the exciting duty from sheer exhaustion and cold. The result of this, the first day's labor, was the releasing of over two hundred sheep living, and likely to live, and about a score smothered. The following day, by the exertions of the same young dog, several more were dug out, some living, but many dead; and few indeed were passed over without being marked by the young creature, whilst the older dogs stood listlessly by, though infinitely more accustomed to sheep, and trained to almost perfection in other duties. Day after day added to the numbers of both living and dead till finally all were found; but the loss amounted in this lot, and on the rest of the farm, to nearly two hundred sheep. The last living sheep discovered was on a new year's day. It had taken shelter in a hollow under a whin, and had remained in the small space of a five feet cave from the 18th of November, with nothing to eat but what it could nibble from the prickly bush; and when liberated on a bright frosty day, it appeared nearly or quite blind.

The dog above mentioned exhibited another trait of intelligence and calculation of a remark-



able kind. His master was a constant church-goer, and the parish church was more than a mile distant. By some singular process, the animal arrived at a true knowledge of the day when his master attended church, and of the hour, and almost minute of his leaving again; and was as punctual in going to meet his master about two-thirds of the way.

Another instance among many, of the sagacity of a Cumberland sheep-dog deserves to be put on record. A plot of low and level ground near Muncaster Castle, called Hestholm Marsh, is usually covered twice in the day by the tide, and sheep were constantly depastured on it, with a field on a higher level to retire to on the rising of the tide; but the stupid animals, being fond of the salted grass, were sometimes surprised and impounded by the tide, and then the dog's services were requisite in the rescue. In a little time he learned to go down and clear the marsh of his own accord, as constantly as the tide flowed during daylight; and thus was the means of preventing all loss by the waters, so long as he was able to attend to his self-imposed duty.

There may be little remarkable in dogs executing duties occurring daily and at the same hour. Many dogs have learned to bring the cows home at the regular milking hour, without special directions; and one well known by the writer, performed this service with great punctuality for many years, as well as hastening home from other work every day, to be present whilst an unruly bull was let out to water.

There is an old saying, and one not devoid of truth, that "the laziest shepherd invariably has the best dog;" but necessity is as powerful an agent in this case as indolence, for no shepherd can have better trained dogs than the one at Stockhow Hall, who has numbered four score years, and whose daily range few young men would willingly undertake. Another old man, a rheumatic cripple, almost unable to walk, and mounted on an ass from morning till night, has the sole care of a large stock farm; and, with the aid of his two dogs, can ride into the flock in any part of the fields, and lift a sheep before him on the ass and ride away with it.

#### REAPING MACHINES, NITRATE OF SODA, &c.

Amongst the other articles of importance in this volume is a "Report on the Exhibition and trial of implements at the Lewes meeting," in which the various defects or perfection of those several reaping machines, which have of late years attracted so much attention, are closely analysed, and fairly set forth. Nothing can exceed the admirable performance of these machines, each in its peculiar way. The comparative perfections are condensed in the Report. Hussy's machines are "cheap handy implements, which will be found to work well, if used only when corn is dry, and where it has little undergrowth of clover." The cutting principle of

the M'Cormick machines is reported as much improved, and as being "simple and efficient;" but to Bell's reaper, as to its mode of delivery, the meed is given of superiority over all others. Besides its power of cutting its way into the crop, and of laying the swathe to either side is highly in its favor. But its difficulty of steerage and awkwardness in turning, the writer conceives to be "unavoidable when the propelling power is placed behind the machine." With the concluding observation, our own ocular experience leads us entirely to agree:—

Finally, it may be stated that, though none of the reapers can yet be considered completely satisfactory, the experience gained during the past season will, doubtless, enable the manufacturers to turn out serviceable machines calculated to render real assistance to the farmer; and after a long and patient examination of the performances of this class of implements, the writer is convinced that no long time will elapse before the great bulk of both corn and hay crops in this country will be cut by machine.

An article on the sources and the supply of cubic saltpetre, salitre, or nitrate of soda, and its use in small quantities as a restorative to corn crops, by Mr. Pusey, is highly suggestive. The writer says:—

Last Spring finding that about ten acres of barley, sown very early—that is, in February, had suffered severely by frosts unusually sharp for the season, I determined to try the experiment of applying as a restorative some nitrate of soda, but to use it, as the land was in good order, in a much smaller dose than was ever given before, 42lbs per acre. It was accompanied with twice the quantity, 84lbs. of common salt, which does not act as a manure, at least on this land yet seems necessary for correcting the luxuriant vegetation caused by the nitrate. A long strip (perhaps half an acre) was left undressed on one side to serve as a test. Small as was the dose, it acted immediately, for the barley so treated soon recovered its colors; and acted thoroughly for until harvest the barley stood half a foot higher than on the undressed portion. The result on threshing out was most satisfactory, for, while the undressed portion gave only 40 bushels, the remainder, though so gently treated, yielded 47 bushels per acre. The cost of the dressing was 6s. for the nitrate, 4d. for the salt; 6s. 4d. in all, the value of the seven bushels gained was 26s. and the profit, therefore, 300 per cent. Indeed, I might justly assume a yet larger profit, for, contrary to former experiments with nitrate, the nitrated corn was superior to unnitrated in quality also, to the amount of about 2s. per quarter, which would give a further profit of 10s. on the other forty bushels, on a total return of 36s. per acre, for an outlay of 6s. 4d., to say nothing of the straw, which might cover the trifling labor.

It will be admitted that this at least was no garden experiment, being a fair-sized trial upon a whole ten-acre field.

The result was beyond my own expectations; and not the least curious question on the action of the manure is the question, how so small a quantity of any salt could be spread equably, sown by hand it was, or by any machinery even, so as to act uniformly upon the entire crop. Of the quantity used the weight gives of course no distinct notion, but I find that 42 lbs. weight of nitrate are not more than will three times fill a man's hat, and certainly it is marvellous that three hatfuls of any substance should increase so much and so regularly the corn upon a whole acre of land. Even the acre, however, does not present itself as a familiar measure to any but practical farmers. It will be useful, therefore, to take a further illustration. St. James's Park contains, I believe, 46 acres. If that entire space from Buckingham Palace to the Horse Guards, including on each side the Mall and the Birdcage-walk, were cropped with barley, one small one-horse cart-load (17 cwt.) of nitrate would [under the circumstances of the experiment above described] increase the yield by 80 sacks, or eight cartloads of grain. I may be excused for dwelling on this disproportion of cause to effect, because even in agriculture, we are now so habituated to the wonders of science, that our minds become blunted, and, which is material, less ready to enlist those marvels practically in our own service. But if our fathers, at the opening of this century only had heard that, with one cart-load of a new powder, and two cartloads of salt to restrain its vigour, an effect could be produced which would have cost them certainly *four hundred* cartloads of dung, they would have been as much surprised as by learning that the journey from London to Oxford, instead of seven, would occupy little more than one hour. Evidently, then, we too in agriculture have found a new power of our own scarcely inferior to steam in mechanics; and though, like steam, it may cost us time to gain certainty in its use, we must no more shrink from testing its qualities than we would discard the service of fire or of wine, because those mighty stimulants also of body or mind become fatal, if applied in excess.

A letter on "Trunk Drainage;" a "Report on Innoculation for Pleuro-Pneumonia in Cattle;" and a very able prize essay on the "Neglect of Chemistry by Practical Farmers—its Causes and Remedies," by Edward T. Hemming, will be found to deserve close study. A large portion of the volume is occupied with tabulated results of analyses in agricultural chemistry of the highest importance, and which have involved vast labour and research. As a whole, this volume is one of great interest and value.

No tool should be put away while wet or dirty or out of repair.

## EAST OXFORD FARMERS' ASSOCIATION.

At the last meeting of this Association, held at the Town Hall, on the 23rd ult., the following excellent address was delivered by Mr. Goodwin, of Woodstock:

MR. PRESIDENT AND GENTLEMEN:

It affords me much pleasure in responding to the invitation now given me, to offer a few remarks on the subject of Agriculture.

It would be presumptuous in me to attempt anything more than a simple exposition of some of the leading characteristics of the Science of Agriculture; as I have, for some years past, paid but little attention to the practical operations of farming. In regard to the importance of Agriculture, it is unnecessary for me to address you. An art on which nearly the whole human family, and thousands of domesticated animals, constantly depend, ought to command the attention of the most exalted minds. The establishment of Agricultural associations, both provincial and local, and the liberal aid granted by the Legislature annually, are manifestations of the deep interest generally felt upon the subject throughout the Province; while individuals, both in public and private capacity, are endeavoring to assist and encourage the agriculturist in every possible manner. Nor is science less willing to render all the aid within her power to benefit our population [eighty per cent. of whom are employed in this most ancient and noble pursuit]. The application of Chemistry and Geology to Agriculture, as taught in the Normal School, and nobly patronized by the Governor General himself, must be a source of gratification to all employed in tilling the soil. With these few preliminary remarks, I shall, with your permission, proceed to the consideration of *Geology*, as connected with the pursuits of the Farmer, and afterwards to the *Improvements of the Soil*, by mechanical means, viz., draining. As the soil on which the general vegetation of the globe grows is the only source from which the inorganic food of plants can be derived, we are led to inquire into the nature and origin of soils. However much soils may differ in their origin, their physical properties, their chemical constitution, and their agricultural capabilities,—they all possess the common character of containing a certain amount of organic matter. Oats and rye will grow upon land containing from 1 to 1½ per cent.; barley, where 2 or 3 per cent. is present; but good wheat soils contain generally from 4 to 8 per cent. of organic matter; and yet the presence of such substances is not alone sufficient to produce fertility. The earthy part of the soil, which, in general, does not constitute less than 96 per cent. in weight, consists principally of three ingredients:

1. Of silica, silicious sand or gravel.
2. Alumina—generally in the form of clay.
3. Lime, or carbonate of lime.

Pure, or agricultural clay, consists of about 60 of silica and 40 per cent. of alumina, with oxide of iron, for the most part chemically combined.—The strongest clay soils consists of pure clay, mixed with sand, from 5 to 15 per cent. Clay loam contains from 15 to 30 per cent. of fine



sand. Loamy soil consists of pure clay and from 30 to 60 per cent. of sand. A sandy loam contains from 60 to 90 of sand. A sandy soil contains no more than 10 per cent. of pure clay.—In each of the soils above described the siliceous sand may be separated by mechanical washing. But the above classification has reference only to the clay and sands, while we are fully aware that lime is an important constituent of soils.—We have therefore marly soils, in which the proportion of lime does not exceed 20 per cent.—Calcareous soil contain upwards of 20 per cent. of Lime. These are also denominated calcareous clays, calcareous loams or calcareous sands according to the quantity of clay and sand which are present in them. Lastly, vegetable moulds, which are of various kinds, contain from five to ten per cent. of organic matter. The method of determining the amount of vegetable matter, sand, or clay, for the purposes of classification, is to dry well a portion of soil and weigh it, then heat it to dull redness; the loss in weighing it again is the quantity of organic matter—chiefly vegetable, with a little water. After being burned, take 100 grains, let it be put into half a pint of water, with half a wine-glass full of spirits of salts, and frequently stirred. The loss by this treatment will be the per centage of lime. A fresh portion of the soil may now be taken and washed, to determine the quantity of silicious sand it contains. If the sand, after washing, be supposed to contain lime, it may be separated as previously stated, by applying spirits of salts.—Having hastily glanced at the classification of soils from their chemical constituents, I shall now proceed briefly to consider their general origin. Over the greater part of this peninsula, as in Canada generally, the rocks are covered by accumulations of loose materials, chiefly of sands, gravels, and clays. This covering varies from one to two hundred feet, and the fertility of the different parts of the province must necessarily depend upon which of those layers may chance to lay uppermost. When naked rocks are present it may be observed that the actions of rains and frosts, together with the atmosphere, causes their surfaces to shiver off, and crumble down or wear away. Hence at the base of cliffs, loose matter collects and gradually forms a soil. The accumulations, of which I have alluded to as covering the rocks to various depths, consist of materials thus washed down or otherwise transported by water, winds, or by other geological means. Thus, the general conclusion may be fairly drawn that the various soils have been produced by the gradual decay, or crumbling of pre-existing rocks. It is therefore evident that wherever a soil rests upon the rock from which it has been derived, we may rationally expect it to partake more or less of the composition of that rock. Beneath the soil and the drifted materials on which it rests, we invariably find the solid rocks consisting of layers or beds of different thickness, resting one upon another and always maintaining the same relative position. These layers are denominated *strata*, hence such formations are called stratified rocks. Beneath these aqueous formations lie what are called the unstratified or igneous rocks, from their having been more or less in a melted

state. The stratified rocks are divided into the primary (the most ancient), the secondary, and the tertiary, which overlie both. Before proceeding to consider the peculiarities of the strata on which, and from which, the soil of this county, as well as that of the Western Province, rests, it may not prove uninteresting to enumerate briefly the various formations deposited in many parts of the Globe since the Silurian system was formed.

1. The *Tertiary Strata* which lies immediately below the drift is an extensive series of 2,000 feet deep, comprising vast accumulations of marine and fresh water deposits, as shells, sands, boulders, plants and remains of animals, both of extinct and existing species.

2. The *Second Strata*, the chalk or cretaceous group consists of a marine series of formations, including strata of limestone, sandstone, marls, and clays abounding in marine fossils, reaching to the depth of 1,000 feet.

3. The *Wealden Formation* is a peculiar fresh water deposit of 900 feet deep. It contains beds of sandstone, clays, and limestone, almost wholly composed of fresh water snail—shells and minute crustacea, and is particularly characterised by the remains of peenliar aquatic reptiles.

3. The *Oolite formation* is a marine deposit of two thousand feet in depth, consisting of limestone and clay, which abound in marine shells, corals, fish, reptiles, and animals of the kangaroo or pouched order.

4. The *Lias formation* is a series of limestones, clays, shells and marls, of 700 feet, which contain marine shells and the remains of two genera of reptiles, the Ichthyosaurus and Plesiosaurus. The term 'lias' is a contraction of 'layers.'

5. *Saliferous, or New Red Sandstone*, is a marine formation, consisting of marls and sandstones of a red colour. It is divided into upper and lower; latter contains red and white marls, also magnesian limestone. It is named 'Saliferous,' because it contains saline materials; thickness, 1700 feet.

6. The *Coal System* consists of shells, clays, ironstone, and limestones interspersed, with beds of coal to the depth of 5,700 feet.

7. The *old Red Sandstone* is a marine formation, containing red and green marls, limestones, sandstones, shells, corals; also, flagstones and shales. The colour is of a dull red—whence the name. It is 10,000 feet thick.

8. The *Silurian System*, upon which the soil of Western Canada rests, is a marine formation, consisting of limestones, shales, sandstones, slates, and flagstones, abounding in corals, shells of various kinds, with enchrinites and trilobites. It extends to the depth of 7470 feet. Such is a general description of the nature and descending order of the stratified rocks as they occur in Great Britain; but as these different formations have been deposited by the degradation of pre-existing rocks, it only remains for me to call your attention to the composition of the Granites, from which originally all soils were derived. The name Granite is given to rocks constituted of a mixture of three simple minerals—Quartz, Mica and Felspar, or Hornblend. QUARTZ is silica and Oxygen; FELSPAR is composed of aluminae

silica, potash, soda, lime, oxide of iron and water; Mica is composed of alumina, silica, potash, lime, magnesia, manganese and iron. The constituents of granite are decomposed principally by the carbonic acid contained in the atmosphere, as well as by the action of heat, cold and water. Hence the various stratified rocks previously described were originally formed and deposited. Now, since the mineral food of plants consists principally of potash, soda, lime, magnesia, oxide of iron, oxide of manganese, silica, sulphuric acid, and as these ingredients can only be supplied to vegetables in a state of solution, it is evident that any means which the farmer possesses to promote the decomposition of the soil, should, as far as practicable, be put into operation. There are three distinct methods of operation by which the soil may be improved. The one to which I propose drawing your attention at this time, is draining. I shall now, by your permission, endeavor briefly to state some of the benefits to be derived from the draining of land.

1st. It carries off all stagnant water, as well as the excess of rain that falls annually.

2nd. It allows rain water to filter slowly through the soil, and in so doing the various gases, such as ammonia and carbonic acid are retained by the earth, instead of being carried off with the water, injuriously washing away the solvent parts of the soil on the surface.

3rd. It arrests the ascent of water from the subsoil, and thus frees it from noxious substances, and preserves the surface from too much moisture.

4th. The descent of water causes a constant descent of fresh air through the soil, which experience has shown to be so valuable in promoting the growth of crops.

5th. When the soil is freed from the constant presence of water, it becomes drier, looser, and more friable, and consequently more easily worked.

6th. Draining is equivalent to a change of climate. In consequence of the drainage which has taken place in some parts of this county, crops of Indian corn have arrived at maturity full two weeks sooner than they formerly did, yielding 80 bushels of ears per acre.

7th. It is equivalent to deepening the soil. The roots of plants which have hitherto been confined almost entirely to the scanty depth of a few inches are now enabled to penetrate to the depth of the drains in search of food, and in so doing find a store of substances washed from the soil above, which have been accumulating for years in the subsoil.

8th. By drainage the crop will be greatly augmented. It may be safely stated that the two millions of acres of arable land in Canada would produce fifteen millions more than now if the soil were roughly drained.

9th. Permit me to call your attention, before concluding, to a still greater benefit which would accrue to every member of the community, by the adoption of a skilful drainage throughout the country, viz: the general health of the inhabitants. It is an undeniable fact that fever and ague, which formed in some parts of Great Britain

nearly one half of the diseases of the population, have almost entirely disappeared since the introduction of draining, while at the same time the number of deaths have diminished nearly one-half. Apart, therefore, from pecuniary profit, a desire to promote the comfort of the entire community of a county or township should influence the possessors of the soil to introduce thorough draining. I am, however, conscious that the necessary expenditure on draining to advantage would fall too heavily on most, yet if half a dozen farmers would join in manufacturing their own TILES where the nature of the soil will permit, I cannot but think that the parties would be remunerated in the course of a few years. This last consideration, however, I beg most respectfully to refer to your better judgment.

Without detaining you further, I shall only express my humble and most ardent wish that your Society may long continue to be a blessing to the community, and a source of benefit and recreation to its members.

After a vote of thanks to Mr. Goodwin, the next meeting was appointed to be held at the Town Hall, on Tuesday, the 23rd of August, at five o'clock P.M.

Subject of discussion: *The Selection of Seed.*

It is desired that all the members will bring with them samples of their Fall Wheat.

(To the Editor of the Canadian Agriculturist.)

SIR,—If there is one thing of greater importance to the farmer than another, it is a careful attention in selecting good varieties of seed.

To know the goodness of seed, and its fitness for the purposes for which it is intended, constitute a part of the elements of the husbandman's philosophy. The seedsman therefore, is a valuable auxiliary, to the husbandman, not only as an individual, but as a class; upon his candour and his dealings is based his success, more especially if he possesses a taste for botanical pursuits.

A living illustration of what may be accomplished by a combination of these qualities, rare we admit, is found in the Author of the *Vegetable products of Scotland*, whose distinguished success is worthy of all admiration, I mean CHARLES LAWSON, Esq., of Edinburgh. The volume alluded to is a descriptive account of the admirable collection of vegetable products of Scotland exhibited by Peter Lawson & Son in London, and under subsequent arrangements with the British Government, deposited in the Museum of the Royal Botanic Garden of Kew.

Your agricultural readers will be gratified to learn that these gentlemen have in preparation a collection on a smaller scale, intended for presentation to the Bureau of Agriculture at Quebec.

Believing that the following description of the establishment and nurseries of this house, although published some time ago in this country, would be new and interesting to many of your readers, I have much pleasure in transmitting it.

I am Sir,

Your obedient servant

A. KIRKWOOD.

Glasgow, Scotland, June 10th, 1853.



## PUBLIC NURSERIES.

OF MESSRS. PETER LAWSON AND SON, SEEDSMEN TO THE HIGHLAND AND AGRICULTURAL SOCIETY, EDINBURGH.

As now enlarged and improved by the skill and enterprise of its conductors, the establishment of Peter Lawson & Son has deservedly acquired the reputation of being the most extensive and the best arranged seminary, or seed store, in Europe. We speak from personal and particular observation, having had opportunities of inspecting many of the principal seminaria on the Continent, and most of those in Britain; and, unquestionably, there are none which can approach it, either as to convenience or completeness. Its warehouse accommodation is most extensive, comprising, with the shop and counting-rooms, a superficies of no less than 22,776 feet, or the total length of the shops, offices, and warehouses, extends to within 61 feet of a quarter of a mile. To the building, which stands alone, and forms a conspicuous architectural object in the picturesque quarter where it is placed, there are three entrances: one underneath, in the Cowgate; a second in Victoria Street; while the principal access is from George IV. Bridge. The floor entered from the bridge contains the shop, fitted up in the most substantial and elegant manner, with solid oak. On this floor, also, are a suite of counting-rooms and a well selected library, which includes all the most valuable and rare works on agriculture and horticulture. To this department of the establishment, the proprietors, with exemplary liberality, grant ready access to all who may desire it for the purpose of reference and consultation. At the back of this floor, a sample-room has been constructed, with a glass roof, in which is contained a series of cases for holding samples of the different species of seeds. This apartment is glazed in front and sides also, so that visitors, while engaged in examining seeds, have the advantage of viewing the specimens both under a vertical and a lateral light. This erection is also furnished with a glazed case, heated by gas, and partially inclosed with colored glass, for testing the germination of seed before supplying the public. It will be remembered that, some years ago, a question was raised as to which of the solar rays possessed the power of eliciting the action of germination in seeds; and that various experiments having been made toward the solution of this interesting question, it was discovered, by Mr. Hunt, that the violet ray alone possesses the chemical principle requisite for developing the vitality of the embryo. This, then, is the mode which the Messrs. Lawson invariably employ in "proving" their seeds.

Round the apartments at the back of the shop extends a gallery, in which are arranged implements of every description used in horticulture. On the floor beneath is an extensive range of warehouses, in which are kept the garden seeds; and immediately below, extends a similar range of warehouses, appropriated to the different varieties of turnip seed. Underneath is a range of warehouses for grass seeds, arranged according to a method strictly systematic. On the lowest floor are stored all sorts of heavy seeds, as grain, beans, peases, tares, clover, &c. In addition to this storehouse, or seminary, which to use a Plautian phrase, presents a perfect "rusticus mundus," or rustic world, three entire arches of Geo. IV. Bridge are commodiously fitted up for purposes in connection with the increasing business of this extensive establishment, including carpenter's workshops, rooms for mending and repairing sacks, stables, &c. The total height of this range of warehouses is 60 feet, and, with the addition of the museum over the shop, 108 feet. The property is the Messrs. Lawsons' freehold; and the building, which being insulated, is the more noticeable by strangers, was erected from the designs of Mr. John Henderson, architect,

and forms a conspicuous and appropriate termination to Victoria street, formerly the West Bow of historic note.

Having thus given a rough sketch of this establishment, which in strict phrase, constitutes the *Seminarium* or seed department of the firm, we thence proceed to present a slight notice of their *Plantarium* ornamental grounds. As previously stated, those formerly in their possession, in various parts of the suburbs, are no longer occupied, it being deemed most advisable to devote to the purposes of a plantarium one continuous and extensive tract, which is situated on the Granton Road, and known as the Golden Acres. In the selection of this ground, and the arrangement of its different compartments, Mr. Lawson has exhibited his well known practical and scientific skill and judgment. The most important feature in the nursery is the Aboretum, the first, we believe, formed in Scotland, arranged according to the Natural System, and comprising upwards of 1200 named Hardy Trees and Shrubs, 1000 Ericacæ, and nearly as many Rosacæ. In acknowledgment of the manner in which the novel undertaking was carried out, the Highland and Agricultural Society of Scotland, in 1845, awarded Messrs. Lesslie a handsome piece of plate, bearing a suitable inscription. The splendid collection of Coniferous Plants also lends its attractions to the Golden Acres, rich, in no ordinary degree, in all the more rare and valuable varieties of the genus *Pinus*, including fine specimens of the *P. Austriaca*, introduced into this country by the firm, and also of the *P. Cambra*, which latter Messrs. L. was the first to plant generally throughout Scotland, single specimens having previously only existed in localities widely scattered.

The collection of fruit and forest trees is ample and diversified, and presents all the appearance of fine healthy plants. The grounds are rich, likewise in ornamental trees and shrubs, as well as herbaceous and hedge plants, and florists' flowers. There are no fewer than 800 varieties of roses on stools, and a large collection of named grasses, native and exotic. Here, further, may be seen a thriving plantation of the celebrated tussac grass (*dactylis cæspitosa*), which produced ripe seed last season. The green-houses are four in number, and contain a most extensive and varied assortment of tender plants. There are, also, propagating houses and pits, which are well filled. Complete and admirable, indeed, are the arrangements which pervade the entire establishment, rendering it a finished model or pattern of its kinds. Each of the several departments of the nursery is under the superintendence of a foreman, just as if each were a separate and distinct establishment, requiring peculiar culture and attention. Our conclusions as to the extensive stock and vast variety are not deduced from the printed catalogues, issued by the firm, but from personal scrutiny; and we feel fully justified in stating we regard it as unusually rich in trees, shrubs, and plants in general demand. To cultivate others beyond the extent requisite for filling up botanical or systematic arrangements, would be to evince a total ignorance of existing circumstances, and to betray a want of professional knowledge, which those who carefully examine this extensive establishment certainly cannot lay to the charge of its skilful and spirited proprietors.

The Highland and Agricultural Society of Scotland, in 1827, conferred on Mr. Charles Lawson, the then sole representative of the firm, the appointment of their seedsman and nurseryman; and, soon after, the Royal English Agricultural Society conferred a somewhat similar honor—that of seedsman and nurseryman to that body in Scotland. The senior partner honorary member of several Foreign Agricultural Institutions, and is also conservator of the museum of the

Highland and Agricultural Society of Scotland; of which department he was originator, having formed the nucleus of the collection in connection with his seed establishment in Hunter Square. An arrangement was subsequently entered into between him and the Society, by which the collection was transferred to that body and considerably augmented. The connection of this firm with the society must have proved of great advantage, in a practical point of view.

The most important services, perhaps, which the firm have rendered to the agriculturists of this country, are the introduction to general notice of the Black Fir of Austria, the Italian Ryegrass, and Dale's Hybrid Turnip. The first, an important addition to our forest trees—the second, equally so as to our tillage lands—and the last, one of the most valuable roots to the stock farmer.

Messrs. Lawson have published some works of acknowledged practical utility to the farmer and gardener, the principal of which is the "Agriculturist's Manual," which presents a familiar description of the agricultural plants cultivated in Europe, and includes practical observations respecting those suited to the climate of Great Britain. Another highly valuable publication is their "Treatise on the Cultivated Grasses, and other Herbage and Forage Plants." With a characteristic spirit of progress, Messrs. Lawson have lately added to their establishment a private printing press, and have now, we understand, one or two in the course of preparation.

The skill and spirit evinced by this firm have gone by no means, unnoticed. Unusual, indeed, in number, are the works of honour which they have received from the Highland and Agricultural Society in the form of plate money, medals &c. Among the principal of those may be here commemorated the following, which form a strikingly suitable conclusion to this rather rambling and imperfect sketch of an establishment, an adequate account of which, in its different departments, would demand a moderately-sized volume—a volume, too, which, to all travellers, so to say, through the Vegetable Kingdom, would afford a serviceable guide, and present features of no ordinary interest:—

- 1.—For a collection of Living Grasses, including many rare species.
- 2.—For a Report on the Formation of Arboreta.
- 3.—For the most successful Experiment on Saving the Seeds of Natural Grasses, and for Laying down Lawns to Permanent Pasture.
- 4.—For the Introduction of Pinus Austraica.
- 5.—For the Introduction of Italian Ryegrass, and a report thereon.
- 6.—For the Importation of Seeds of Pinus Sylvestris from the Native Forests of the Continent.
- 7.—For raising the greatest quantity of Plants of the Larch from Seed imported from the Tyrol.
- 7.—For raising the best variety of Perennial Ryegrass Seed and the best White Globe Turnip Seed.
- 9.—For a collection of Roots and Seeds, distinguished for its extent, variety, and arrangement, exhibited at Edinburgh, in 1827.
- 10.—For a similar collection, exhibited at Glasgow, in 1827.
- 11.—For a similar collection, do. Kelso, in 1828
- 12.—do. do. do. do. , 1834
- 13.—do. do. do. do. at Glasgow, 1844.
- 14.—do. do. do. do. Inverness, 1846.
- 15.—do. do. do. do. and a collection of Coniferous Plants, exhibited at Aberdeen, in 1847, the Gold Medal of the Society was awarded
- 16.—For an Essay on the Potato, accompanied by specimens of 75 varieties.

For the eight enumerated, were conferred valuable pieces of plate, with suitable inscriptions; for the

others, gold and silver medals. Besides the above, the Royal Caledonian Horticultural and other societies have voted medals and other awards to the Messrs Lawson.

Among the ancient Romans, a gladiator who had frequently come off victorious, was entitled, "Plurimum palmarum gladiator," i.e., literally, "a gladiator of very many palms." So, semblably, may a member of this experimenting and spirited firm be, in a double sense, and even more appropriately styled, "Plurimum palmarum seminor," a nurseryman or rearer of very many palms. In fine, it may truly be said of it, "Palmaequi meruit tulit," or it merits every palm it wears; and numerous though they be, we trust it will not rest content, or recline on its palms, but go on to gain yet more and more.

#### SALE OF SHORT-HORNED CATTLE.

[The following account of the Sale and Exportation of Durham Stock, taken from the Mark Lane *Express* of June 6th, will be interesting to many of our readers.]—*Editor.*

On Wednesday last, the sale of a portion of the celebrated herd of short-horns belonging to Henry Harvey Combe, Esq., Cobham Park, Surrey, were submitted for sale, by auction, by Mr. Strafford, at the Bazaar, Baker-street, London, attracting a very numerous and highly respectable company of noblemen and gentlemen; amongst whom were several of the leading agriculturists and breeders of the United Kingdom, as well as from Canada and the United States. The prices realized fully prove the high estimation in which the stock were held, 20 cows, heifers, and heifer-calves were sold for £1,105 5s., averaging upwards of £60 each; the highest price was for a yearling heifer, deservedly called *Beauty*, which was purchased by Noel J. Becar, Esq., of New York, U. S., for 150 gs. This gentleman has recently purchased several other very superior specimens from some of our most celebrated herds on behalf of himself and Col. L. G. Morris, the president of the New York State Agricultural Society. Several other cows and heifers realised high prices, as *Violet*, sold to Dr. S. Marjoribanks, Esq., Bushey Grove, for 135 gs.; also *Dairymaid*, at 91 gs. Mr. Le Marchant bought four lots to go to Canada, *Madrigal*, at 80 gs. *Lady Betty*, at 71 gs., *Belle*, 69 gs., *Faithful*, 65 gs. Amongst the other purchasers were the Earl of Macclesfield, Sir J. V. Shelly, Bart., M.P., H. Hall, C. Tanqueray, J. H. Vivian, and J. Whitton-stall, Esqrs. After the sale of the above, a few young bulls, from the far-famed herd of J. S. Tanqueray, Esq., of Hendon, Middlesex, were also offered.—The highest price was for *Liberator*, under one year old, 80 gs. Another bull calf, *Friar Balco*, nine months old, sold to Mr. Champion for 63 gs. The former was bought for Mr. Kelly, near Philadelphia, United States. The others brought good prices. The total amount of the sale for thirty lots was £1,617.

#### EXPORT OF SHORT-HORNED CATTLE, SHEEP, &c., TO AMERICA.

Seldom has it fallen to our lot to chronicle so valuable a cargo as left this port (Liverpool) on Saturday last in the *Crown*, for Philadelphia;



more particularly as relating to the agricultural interest. This may be inferred when we mention, that in the ship mentioned were sent out fifty head of the choicest specimens of short-horned cattle which could be bought in old England: several of them being purchased at high prices which may appear incredible; as probably no ship was ever freighted with anything like so valuable a cargo of this description. Twenty-four head of cattle and a quantity of sheep, the property of R. A. Alexander, Esq., Airdrie House, Scotland, were sent in her, destined for his estate in Woodford County, Kentucky, United States. Some estimate may be formed of the high spirit and enterprise of this gentleman, when we mention that for two animals alone, a two-years old heifer and a yearling bull, named the *Duchess of Athol*, and *2nd Duke of Athol*, bred in this country by Charles Townley, Esq., M.P., Townley Hall, near Burnley, he gave the large price of £525. To Mr. Strafford, of London, who had the superintendence of Mr. Alexander's cattle, we are indebted for several interesting particulars relating to the stock, and who informed us that these two animals were the produce of one cow—*Duchess 54th*—bought at the sale of the celebrated herd of Short-horns of the late Thomas Bates, Esq., at Kirkclevington, and bred since that gentleman's decease. We also noticed in the cargo some very fine young bulls, bought from the justly-famed herd of F. H. Fawkes, Esq., Farnley Hall, as well as some very choice cows and heifers from the well-known herds of Messrs. Bell, Bolden, Cattley, Combe, Downs, Fuller, Lowndes, Tanqueray, Wiley, &c. The sheep, principally of the Cotswold or New Oxford breed, were from the crack flocks of Mr. W. Garne, of Aldsworth, and Mr. John Gillett, of Minster Lovell. The other portion of the stock consisted of 10 short-horned bulls and 15 cows and heifers of the same breed, selected at very high prices for a large importing company, also from Kentucky, the agents for which, Messrs. Dudley, Garrard, and Van Metre, have succeeded, after much time and trouble, in the purchase of a splendid lot of cattle and sheep from the best herds and flocks in the kingdom. In evidence of this we may cite those of the Earl Ducie, Lords Burlington and Feversham, Messrs. Ambler, Beasley, Bell, Booth, Emmerson, Fawkes, Hall, Hopper, Maynard, Smith, Tanqueray, and Townley. They also had several fine specimens of the Cotswold sheep from the flocks of Mr. W. Garne and Mr. Lane, of Broadfield; some pure Leicesters from prime Southdowns from the unrivalled stock of Mr. Jonas Webb of Babraham; besides a valuable stallion of the Yorkshire or coach horse breed; we can only hope that they may have the good fortune to get them out safe and well, and reap the reward which such spirited exertions deserve. We believe for the freight alone, exclusive of the food and fittings requisite for such a voyage, that about £1,200 was paid, while the cost of the stock, with expenses incurred, must have exceeded £5,000.

The grain of wheat contains phosphate of lime, while the straw, which was not intended for our food, contains carbonate of lime only.

## DANCING PIGS.

*To the Editor of the Agriculturist :*

SIR,—Being a constant reader of your paper and seeing how few in number your correspondents are compared with your circulation, I am induced to contribute my mite; not that I have anything instructive to communicate, but as anything relating to the habits, oddities, or propensities of our domestic animals must be amusing to many of your readers, and I trust not an unsuitable subject for your pages, I will relate what I was an eye witness to in my boyish days, of the effects of music upon the swinish multitude.

It will be known to most of your readers that when Buonaparte was banished to St. Helena and peace proclaimed, great rejoicing took place all over England. In the little village of Harworth, near Bawtry, York, had its fete, a tea party for the adults and a dance on the green for the juveniles, with a *band of music* of course, this took place in a paddock, in close proximity to a pigstye, where a sow happened to be that evening “in the straw;” and the next morning it was discovered that she had pig’d a litter of dancing pigs! You may laugh. “But truth is strange, and far more strange than fiction.” I do not mean to say that they danced reels or jigs, but suppose it was the polka (polka?) they danced; however, scores of people came to see Tommy Sidwell’s pigs dance.

Well, some time afterwards as I was playing the flute after my day’s work was done, my brother came to me and said, that a favourite sow was about piging, and asked me to sit up with him and see that she did not overlay her pigs. I took my flute and the lantern, and we seated ourselves beside her; I to beguile time played away as before, when my brother remarked that perhaps if I did so, the pigs would be like Tommy Sidwell’s.

Now some people said it was not the music, but putting rings in the sow’s nose during pregnancy, that had effected her offspring. However when the first pig dropped we fancied that it gave a rather unusual shrug, or jerk, and my brother begged me to cease playing: I laughed at the idea and said, that one pig would not dance well alone without a partner, and I continued playing and joking until all were pig’d; and however strange it may seem, these *pigs were never still night or day for months!* Even when lying asleep beside the sow they had a sort of convulsive twitching motion, and on any noise however discordant, such as rattling on the door with the dung fork, they would be all over the sty in a minute; their movements were chiefly backwards and spasmodic, not reeling or staggering, more like St. Vitus’s dance than anything I can compare them to; it did not appear to affect their thriving, though I often thought their constant action must deteriorate them; as they seemed to have to hold hard on to the teats when sucking, to prevent their retrograde motion; it left them as they grew up, and none of their descendants were similarly affected, nor any that I have ever seen, heard or read of, save these; and whether it was the ringing of the sow, or the music that caused it, I leave you and your

readers to judge and comment upon it as you think fit; and with apology for my long tale, (I never like to curtail my pigstails, but to see them curl.)

I subscribe myself,

Yours truly,

ORPHEUS PIG-TALE.

Otonabee, May 1853.

## HORTICULTURE.

### THE GARDEN.

The older we grow, the fonder we become of our garden. The time was, "in our hot youth, when George IV. was King," that we haunted the stream, and loved to drop the lure, softly as thistle down, on the dimpled pool. But the love of the "gentle craft" subsides somewhat with the advance of years, and seems disposed to pass away imperceptibly into a pleasure of the imagination. With the return of the sweet vernal season, the piscatory passion, indeed, duly revives, and we betake ourselves strenuously to repair our tackle, and to study "Stoddard." But were it not that then, too, Piscator junior returns home from college, and excites the weaker flame in the paternal bosom by the ardor of his angling enthusiasm, and succeeds in hurrying us away to Lochard, or some cherished upland stream, we doubt exceedingly if whether the most inviting, and streams of the most perfect tint, and reports the most propitious regarding the inclinations of the finny tribe, would withdraw us from our glowing polyanthus and bright-eyed auricular.—We feel indeed, that our affections are gradually concentrating themselves on our garden; and we have satisfied ourselves, on the high grounds of philosophy, that it is wise that they should do so.

Cicero gives it as his opinion, that the superintendence of a garden is an employment appropriate to mature years; and although the Tuscan sage has left his theory undeveloped, it is not difficult to see how the pursuits and pleasure of horticulture should be in unison with a disciplined understanding and a calm breast. Perfect wisdom placed the perfect man in a garden, to dress and keep it. The place and the duty must have been divinely congenial with the exercises of an undeviated heart. The love of man's primeval calling seems yet to linger fondly in the bosom of the exiled race. The first pleasure of children is to gather fresh flowers from the daisied mead, or to play their little hands in the allotted patch of garden-ground. "Heaven lies about us in our infancy"—some faint visionary gleam from Eden seems yet to rest on the infant soul, and, with the dawn of reason, the first voice of childhood seems to say that Paradise should have been its home, and horticulture its proper vocation. It is sadly true, no doubt, that adverse lessons in gardening have come to us from Paradise—promptings of an apostate kind from beyond the Euphrates. Boyhood and the succeeding period of immature manhood, with their tumultuary passions and noisy pleasures, show themselves alien to the tranquil delights of the garden.—But "years that bring the philosophic

mind," and that chasten humanity with their mildening influence, conduct the belated pilgrim back to the garden, and teach him there to find pleasures serene and unalloyed.—*Blackwood's Magazine.*

### THE LEAF ROLLERS.

WITHIN a few years the cultivators of fruit in this vicinity have had their attention attracted to a new enemy, which is highly injurious to the young pear trees. It is an insect in the shape of a worm of the color of the leaf, which about the middle of May commences its depredations on the young leaf, sometimes beginning in the centre, perforating it, and rapidly extending its ravages in every direction and increasing in size and voracity from day to day. The holes thus made in the leaf soon reach a diameter of an inch or more, and where two or three are attached to one leaf, it soon disappears. The foliage of the tree is thus rendered unsightly, and the tree, of course, must be more or less injured. Sometimes, although rarely, this insect attacks the young and tender fruit, which of course is at once destroyed. This insect is more numerous this season than usual, and if some means are not discovered to reduce the number, in a few years it may become as great a pest to the pear trees as the canker worm is to the apple trees. It has been suggested that the application of whale oil soap by means of a syringe would be beneficial—at any rate it is worth the trial.

We have consulted Dr. Harris's valuable work on Insects, in relation to the character and habits of this worm, and we find it is some rascal that is so often found rolling up the extremities of the young and tender leaves of pear trees and occasionally apple trees, and belongs to the family of "leaf rollers." The following is the description as given by Dr. Harris:

"There are many caterpillars that curl up the edges of the leaves of plants into little cylindrical rolls, open at each end, and fastened together with bands or threads of silk. The rolls serve at once for the inhabitations and the food of the insects; and to the latter Linnæus gave the name of Tortrices, derived from a Latin word signifying to curl or twist. All caterpillars now put in this tribe are not leaf-rollers. Some of them live in leaf and flower buds, and fasten the leaves together so that the bud cannot open, while they devour the tender substance within. Some live in a kind of tent formed of several leaves, drawn together and secured with silken threads. Others are found in the tender shoots or under the bark of plants. A few bore into young fruits, which they cause to ripen and fall prematurely. A still smaller number of kinds live on the leaves of plants, exposed to view, and without any kind of covering over them. Most of these insects, when disturbed, let themselves down by threads, like the Geometers. Very few of them make cocoons; the greater number transforming within the rolled leaves, or in the other situations wherein they usually dwell. They are furnished with sixteen legs, and their bodies are nearly or quite naked. Many of their chrysalids have two rows of minute prickles across each of the rings of the hind body,



by the help of which they push themselves half way out of their habitations, when the included moths are about to come forth.

The moths of this tribe are mostly of small size, very few of them expanding more than one inch. They carry their wings like a steep roof over their bodies when they are at rest. Their fore wings are very much curved, and are very broad at the shoulders, and hence these insects are called *Platyomides*, that is, broad shoulders, by the French naturalists. These wings are generally very prettily banded and spotted, and are sometimes ornamented with brilliant metallic spots. The hind wings are plain, and of a uniform dusky or grayish color, and the inner edge is folded like a fan against the side of the body. Their antennæ are naked or threadlike. Their feelers, two in number, are broad, of moderate length, or project like a short beak in front of the head, and are never curved upwards. The spiral tongue is mostly short and sometimes invisible. The body is rather short and thick, and the legs are also much larger in proportion than in Delta-moths. These little moths fly only in the evening and remain at rest during the day upon or near the plants inhabited by their caterpillars.—They are most abundant in midsummer, but certain species appear in the spring or autumn. The habits of the Tortrices, in all their states, are not yet known well enough to enable us to group the insects together under family names.”—*Boston Journal*.

#### THINNING OUT VEGETABLES.

It was Cobbett, we think, who remarked, when speaking of the ill-effect of thick planting, that one cucumber plant in a hill would bear more fruit than two, two more than four and so on, and if there were fifty plants in a hill, the whole of them put together bear no cucumbers at all! The truth is, there is a much greater loss in allowing vegetables to stand thickly together, than most are at all aware of. To insure a crop plenty of seed is sown, with the intention of thinning at the proper time; but when thinning day arrives, it requires rather more nerve to commit what appears to be the merciless havoc of tearing out nine-tenths of the beautifully growing young plants, than most people possess. A crop of beets has just commenced forming handsome bulbs, precisely one inch asunder in the row; certainly something of the surgeon's temper is needed to lay nine-tenths of these withering in the sun—cucumbers are just beginning to throw out their yellow blossoms, and it seems to some a hard matter to tear out three-fourths of the dozen now growing in the hill. It must however be done—all the surplus plants in a bed of beets or turneps, or a hill of cucumbers, squashes or melons, are to be regarded as so many positive, downright weeds, obstructing the growth of the rest and yielding but little or nothing themselves. If our crops are to be crowded and stunted, we would quite as willingly have it done with pig-weeds and fox-tail, as to have them smothered and the soil exhausted by seeds of their own species.

Many years ago, when the cultivation of the rutabaga was first introduced, we could invari-

bly distinguish the crops of the novice, by the thickly growing, half-developed bulbs. “O! but they had thinned them to a very great extent—they had cut out three-fourths, and reduced them from one inch to four inches in distance, whereas none should ever stand nearer than a foot to each other, if the soil possesses any thing like a fair degree of fertility; but this looked too much like indiscriminate slaughter, and could not be thought of for a moment.—The finest specimens of garden products, which we see exhibited at horticultural shows, are those which have been well thinned and allowed every opportunity to develop themselves freely; and the same is true of ornamental plants, where a full, rich, and luxuriant growth and bloom, are obtained through the adoption of the same principle.—*Country Gentleman*.

#### EARLY TOMATOES.

There is probably no fruit which is at present more generally and deservedly esteemed, than the Tomato. Its medicinal virtues are more universally recognised by practitioners, and a very few gardens are destitute of it, though owing to various causes not necessary to mention, success in cultivating it is rarely attained. The soil best adapted to this fruit, where it is required early in the season, is a fine dry sand. A shovelful of old well rotted manure in each hill, will be sufficient and the plants after they come up, require only to be hoed and weeded, to insure an abundant crop. Sticks to keep the fruit from coming in contact with the dirt, may be supplied, or a few bushes placed around the plants, will be a good protection. On very rich land, the vines possess great vigor, but the maturation of the fruit is retarded, and is less rapid and healthful. For sauce, pies and pickles, as well as for a variety of other uses, the tomato is unsurpassed by any vegetable with which we are acquainted. The yield is very large, consequently a full supply for domestic purposes and uses, may be obtained from a few hills. The yellow Tomato is generally preferred to the red, though both are good. Preference is perhaps, in this, a matter of mere taste, after all. In the vicinity of large markets, as much clear profit is frequently realized from a few rods of land, cultivated in early tomatoes, as from many an hundred acre farm, which produces only the ordinary kinds of vegetables and grains.

The *Revue Horticole* contains some startling facts as to the effect of charcoal on flowers. Roses of a faded color.—The experimentalist covered the earth in the pot with pulverized charcoal, about half an inch deep. In a few days the flower bloomed a beautiful and lively color. He took away the charcoal, and put fresh earth. Next spring the flowers were again pale and discolored. He applied charcoal as before, and the deep rosy red color was again established. Violets and petunias, the writer also found, had their colors intensified by the application of the charcoal. Mr. Cuthill, of Camberwell, a great advocate of the peat charcoal, proves it to be useful as a manure, either alone, mixed, or saturated with drainage. Mr. Burnell testifies to its use on strawberries, cabbages, and peas and beans.

## THE LILY.

The following remarks from *Breck's Book of Flowers*, on several varieties of the Lily tribe, will not be devoid of interest and value to some of our readers.

The root of the Lily, or what is generally denominated the root, is a scaly bulb, the scales being laid over each other in an imbricate form, inclosing the germ, or bud. The bulb is not a root, strictly speaking, but a bud containing the embryo of the future plant. The roots are thrown out from the bottom of these bulbs, or buds, and, unlike the fibres of the Tulip, are perennial; and on their strength depends, in a great measure, the vigor of the future plant. Bulbs, long kept out of ground, are very much weakened, and a number of years will elapse before they recover strength to bloom in great perfection. After the flowering of the Lily in August, the foliage of many species decays; the bulbs then are in the most perfect state for transplanting. If they are permitted to remain long after this, and the foliage begins to start again, they will not bloom so strong the next year. The Lily should not be moved any oftener than is necessary. It is not like the Tulip and many other bulbs, which are not injured, but rather improved, by taking them up annually after flowering. The Lily will do well in any well prepared border or bed. To have them in perfection, the soil should be excavated eighteen inches deep, and filled with a compost of peat, or swamp muck, undecayed manure, or leaf mold, a foot deep; the remaining six inches may be peat and rich mould. The bulbs of strong-growing Lillies may be planted from four to five inches deep; and weaker sorts from three to four inches. In the borders, three bulbs, of the stronger-growing varieties, are enough for one group, or five, of the weaker sorts. They have a pleasing effect when planted in masses; or they may be planted in beds. Most of the species are quite hardy; but they will all be benefited, and bloom more strongly, provided they receive a covering of rotten manure before winter sets in.

*Lilium Candidum*.—The Old White Lily.—This species has always been considered the emblem of whiteness, and is too well known to require any description. A mass of White Lillies is always beheld with admiration, and they perfume the air with their delicious fragrance. The White Lily is, therefore, indispeusable, and should be found in every garden. It sometimes attains the height of three or four feet, and is in flower about the first of July.

*Lilium Martagon*.—Turk's Cap Lily.—There are many varieties of this species; some with pure white, others with purple, spotted, or variegated flowers. The petals are very much reflexed, giving them the appearance of caps. In strong soil, and the roots well established, the stems are sometimes thrown up from three to five feet, producing twenty or thirty flowers, flowering in July.

*Lilium Tigrinum*.—Tiger-spotted Lily.—A very common, strong-growing species; but very showy, having fine, reflexed, orange flowers, with

black spots. It has the peculiarity of producing small bulbs in the axil of the leaves. It grows from four to six feet high, flowering in August, and is a suitable plant for the shrubbery as well as the border. It is very easily propagated, as all the axil bulbs, when planted in the ground, soon produce flowering plants.

*Lilium Japonicum*.—The Japan Lily.—This magnificent species of Lily, and its varieties, have been introduced but a few years, and, until lately, treated as green-house plants. They are found to be as hardy as our common Lillies, and will, therefore, prove a great acquisition to the garden. \* \* \* These bulbs have commanded extravagant prices; consequently are found in but few collections. As the price is now greatly reduced, we hope soon to see them more common.

All our native Lillies are beautiful, and very much improved by cultivation. While we are bringing together, from the ends of the earth, the treasures of Flora, let not our own be neglected. These may be taken from our fields and meadows, when in bloom, by carefully taking them up with a ball of earth, and in a few years will richly repay the trouble.

*Lilium Superbum*.—Superb Lily.—One of the most magnificent of our native plants; not common in the vicinity of Boston, but in many parts of the State and in New York (and Ohio) in abundance. Stem erect, straight, from three to six feet high, bearing a large pyramid of orange-colored flowers, not unfrequently numbering, when cultivated, thirty or forty. The flowers are much reflexed. They are found in many varieties, with flowers from a yellow to an orange scarlet; in bloom in July.

## PILLAR ROSES.

To ornament a garden, there is no kind of shrub, however beautiful, so well adapted to various forms as the rose. It can be used as a dwarf to fill the smallest beds, as a bush to plant among evergreens, and as a tall standard to form avenues of roses on each side of a noble walk. In the centre of larger circular beds it is often planted in groups, with half standards around, and dwarfs in the front thus forming an amphitheatre of roses, which, when in bloom, is one of the finest sights in the floral garden; again, as climbers, to ornament the amateur's villa, or the more humble abode of the cottager; also to plant against bare walls and palings, forming drooping shrubs, when budded on high standards, waving gracefully their boughs, laden with fragrance and bloom, in the warm gales of summer and autumn; what can be more desirable? All these forms are certainly very pleasing, and however elegant their appearance, still none show off the beauty and grandeur of the rose so effectively as training it upwards to a pillar. In the gardens of the gentry of this country, pillars for roses are frequently made of iron rods, with arches of the same, or small chains hung loosely from pillar to pillar, so as to form beautiful festoons of those lovely flowers. These arches and chain festoons of roses on each side a terrace walk have a splendid effect. Sometimes the arch is thrown over the walk only, and the roses trained accord-



ingly. Those persons who may feel disposed to erect iron pillars can easily ascertain their cost of any respectable ironmonger. They may either be made of a single upright rod, or with four rods at about nine inches distant from each other, thus forming a square pillar, fastened with cross pieces of strong wire. The rose may be planted in the centre, and the branches as they grow be trained to each corner rod, and the small shoots arranged between them. Bring all the shoots to the outside, and do not allow any to twine round the rods, but tie them to each with bar matting or small string, as they can then be easily loosened from the pillars whenever they require painting—an operation that must not be neglected, as the iron would soon rust, and thereby injure the plants and be very unsightly. Previous to planting the roses the soil should be rendered rich, so that they may grow quickly, flower freely, and cover the pillars, arches and festoons, as soon as possible. This rather modern and pleasing mode of culture cannot be too strongly recommended, and for that purpose, if expense be an object, we would suggest that poles, either of oak, ash, hazel, or larch, may be used by fixing them firmly in the ground in a triangular shape, three feet apart at the base, the ends being brought together at the top, and tied with some strong tarred cord or stout copper wire, and then three roses of the same variety, or of different kinds, according to taste, to be planted, one at the foot of each pole, and trained, so that when in full foliage and blossom, a handsome tall pyramid will become apparent, formed of the beauteous and odoriferous “Queen of Flowers.”—*Mark Lane Express.*

#### SOCIAL INFLUENCE OF GARDENING.

“Gardening is a civilizing and improving occupation in itself; its influences are all beneficial; it usually makes people more industrious and more amiable. Persuade a careless, indolent man, to take an interest in his garden, and his reformation has begun. Let an idle woman honestly watch over her flower beds and she will naturally become more active. There is always work to be done in a garden, some little job to be added to yesterday's task without which it is incomplete; books may be closed with a mark where one left off, needlework may be thrown aside and resumed again; a sketch may be left half finished, a piece of music half practised; even attention to household matters may relax in some measure for a while; but regularity and method are constantly required, are absolutely indispensable, to the well being of a garden. The occupation itself is so engaging, that one commences readily, and the interest increases so naturally, that no great share of perseverance is needed to continue the employment, and thus labor becomes a pleasure, and the dangerous habit of idleness is checked. Of all faults of character there is not one, perhaps, depending so entirely upon habit as indolence; and nowhere can one learn a lesson of order and diligence more prettily and more pleasantly than from a flower garden.

But another common instance of the good effect of gardening may be mentioned:—it naturally inclines one to be open-handed. The bountiful

returns which are bestowed, year after year, upon our feeble labors, shame us into liberality. Among all the misers who have lived on earth probably few have been gardeners. Some cross-grain churl may set out, perhaps, with a determination to be niggardly with the fruits and flowers of his portion; but gradually his feelings soften, his views change, and before he has housed the fruits of many summers he sees that these good things are but the free gifts of Providence to himself, and he learns at last that it is a pleasure, as well as well as a duty, to give. This head of cabbage shall be sent to a poor neighbour; that basket of refreshing fruit is reserved for the sick; he has pretty nosegays for his female friends; he has apples or peaches for little people; nay, perhaps in the course of years he at length achieves the highest act of generosity—he bestows on some friendly rival a portion of his rarest seed, a shoot from his most precious root! Such deeds are done by gardeners.—*Miss Cooper's "Rural Hours."*

#### CLOTH COVERING FOR HOT-BEDS.

R. G. Pardee states, in the *Rural New Yorker*, that he has used cloth as a substitute for glass in hot-beds; and although it will not hasten the growth of plants as much, he thinks it has some advantages. It does not burn up the tender plants like glass, if left on the bed in a clear day. It preserves the atmosphere and soil in a comparatively moist state. The plants are stronger and healthier, and grow, when transplanted, without a sensible check. The cloth is prepared as follows:—Take white cotton cloth of a close texture, stretch and nail it on frames of any size you wish; take 2 oz. of lime water, 4 oz. of linseed oil, 1 oz. white of eggs, 2 oz. yolk of eggs. Mix the oil and lime water with a very gentle fire heat; beat the eggs well separately, and mix well with the former. Spread this mixture with a paint brush on the cotton cloth, allowing each coat to dry before applying another, until they become water-proof.

PINCHING off the tips of the most luxuriant shoots with the thumb and finger causes many plants to grow stocky and become covered with dense foliage and flowers.—A little attention soon makes the operator expert in this process, which is far superior to using the knife in any way.

A CURE FOR DAMP.—An architectural friend remarks to us that a wall on a wet foundation may be kept dry by sawing out a horizontal joint of mortar, and pinning in a double course of slates and cement. This must be completed in lengths of about two feet at a time, and the capillary action through the bricks will be entirely prevented.—*Gardeners' Chronicle.*

DOUGHNUTS.—Three pounds of flour, a quarter of a pound of butter, one pound of sugar, four eggs, one gill of yeast, one teaspoonful of rosewater, milk enough to form a soft dough. Stand it away to rise; when light roll it out very lightly; cut it into diamonds, or any shape you choose, and drop them into a pot of boiling lard. Sift sugar over them when cool.—*National Cook Book.*

## MISCELLANEOUS.

## SEVENTY YEARS OF AN EPICURE'S LIFE.

Suppose Talleyrand, when entering on the tenth spring of his extraordinary career, had been placed on an eminence, say the top of Primrose Hill, and had had exhibited before his infantine eyes the enormous quantity of food his then insignificant person would destroy before he attained his seventy-first year:—First, he would believe it must be a delusion; then, secondly, he would inquire where the money could come from to purchase so much luxurious extravagance? But here I shall leave the pecuniary expenses on one side, which a man of wealth can easily surmount when required. So now for the extraordinary fact. Imagine, on the top of the above-mentioned hill, a rushlight of a boy, just entering his tenth year, surrounded with the recherche provision and delicacies claimed by his rank and wealth, taking merely the medium consumption of his daily meals. By closely calculating, he would be surrounded and gazed at by the following number of quadrupeds, birds, fishes, &c.:—By no less than 30 oxen, 200 sheep, 100 calves, 200 lambs, 50 pigs; in poultry, 1,200 fowls, 300 turkeys, 150 geese, 400 ducklings, 263 pigeons, 1,400 partridges, pheasants and grouse; 600 woodcocks and snipes; 600 wild ducks, widgeon and teal; 450 plovers, ruffles and reeves; 800 quails, ortolans and dotterels, and a few guillemots and other foreign birds; also 500 hares and rabbits, 40 deer, 120 Guinea fowl, 10 peacocks, and 360 wild fowl. In the way of fish, 120 turbot, 140 salmon, 120 cod, 260 trout, 400 mackerel, 300 whittings, 800 soles and slips, 400 flounders, 400 red mullet, 200 eels, 150 haddocks, 400 herrings, 5,000 smelts, and some hundred thousand of those delicious silvery whitebait, besides a few hundred species of fresh-water fishes. In shell-fish, 20 turtles, 30,000 oysters, 1,500 lobsters or crabs, 300,000 prawns, shrimps, sardines, and anchovies. In the way of fruit, about 500 lb of grapes, 360 lb of pine-apples, 600 peaches, 1,400 apricots, 240 melons, and some hundred thousand plums, greengages, apples, pears, and some millions of cherries, strawberries, raspberries, currants, mulberries, and an abundance of other small fruit, viz., walnuts, chestnuts, dry figs, and plums. In vegetables of all kinds, 5,475 pounds weight, and about 2,434 lb of butter, 684 lb of cheese, 21,000 eggs, 800 ditto plovers'. Of bread, 4½ tons, half a ton of salt and pepper, near 2½ tons of sugar; and, if he had happened to be a covetous boy, he could have formed a fortification: or moat round the said hill, with the liquids he would have to partake of to facilitate the digestion of the above-named provisions, which would amount to no less than 10,816½ gallons, which may be taken as below:—49 hogsheads of wine, 1,368½ gallons of beer, 584 gallons of spirits, 342 do. liqueur, 2,394½ gallons of coffee, cocoa, tea, &c., and 304 gallons of milk, 2,736 gallons of water. The following is the medium scale of the regular meals of the day, from which I have taken my basis, and in sixty years it amounts to no less than 59 tons, 5 cwt., 1 quarter, 20½ lb weight of meat, farinaceous food, vegetables, liquids, &c., out of which I

have named in detail the probable delicacies that would be selected by an epicure through life. But observe that I did not count the first ten years of his life, at the beginning of which he lived upon pap, bread and milk, &c., also a little meat, the expense of which I add to the age from ten to twenty, as no one can really be called an epicure before that age; it will thus make the expenses more equal as regards the calculation. The following is the list of what I consider his daily meals:—Breakfast—Three-quarters of a pint of coffee, four ounces of bread, one ounce of butter, two eggs, or four ounces of meat, or four ounces of fish. Lunch—Two ounces of bread, two ounces of meat, or poultry, or game, two ounces of vegetables, and half a pint of beer or a glass of wine. Dinner—Half a pint of soup, a quarter of a pound of fish, half a pound of meat, a quarter of a pound of poultry, a quarter of a pound of savoury dishes or game, two ounces of vegetables, two ounces of bread, two ounces of pastry or roasts, half an ounce of cheese, a quarter of a pound of fruit, one pint of wine, one glass of liqueur, one cup of coffee or tea; at night, one glass of spirits and water. Now that I have given these important details, perhaps you will give me some little credit for my exaction and severity respecting the attention which ought to be daily paid to the indispensable and useful art of cookery by our middle classes.—*Soyer's Modern Housewife, latest edition.*

## LIFE IN CITIES.

It is not to be denied that the evils are enormous. If towns give us the highest view of man's range of moral attainment, so do they open up the deepest abysses of human degradation.—There is no reason to suppose that the intensity of moral evil in cities is less than it ever was, although the limits and influence of practical Christianity may be continually widening. Evil can and does acquire concentrated strength, as well as good. In modern times there have been very great external changes; the work of the scavenger, the painter, and the policeman, by which evil has been not so much removed as placed out of sight. We have not only whitened the sepulchre, but encrusted it with marble, and not a few ostentatious inscriptions; but it still contains the rottenness and the dead man's bones. Two sets of circumstances produce the evils of towns, those which may be called moral and those which are physical. Crowding develops not only the intellect, but the passions, so as to render vice, where it exists, early, contagious, and malignant, and therefore to demand moral correctives of proportionate force. But into this all important subject the purpose in hand does not lead us. It requires only a reference to certain physical causes, which are continually operating upon the health, and through the health upon the morals, of all who live in towns. The majority of those persons who subsist, whether as artisans or as laborers, by the receipt of wages, are in many respects more favorably placed for the highest ends of life than that uneasy, struggling, shop-keeping class which seems so much above them. They are free to live far less in show and more in reality. They are in constant



contact with those rough stubborn facts of nature which, under their hands are continually becoming smooth, and orderly, and beautiful. The work which they produce, or the services which they render, may be for a class too languidly luxurious to appreciate their worth; but the honest toil is not the less moral and bracing. The poor weaver, in the midst of his privations, sees the rich velvet spread out beneath his hands, not without a feeling of pride. The mason, the brick layer, the carpenter, must have similar thoughts when on the one leisure evening they stroll through those long lines of sumptuous palaces which are the creations of their industry. These and all other obscure workers, whose lives are not spent in the receipt and computation of money, but in tough, obstinate conflict with difficulties, can never be forsaken by that sense of dignity and self respect, which are part of nature's wages for all real toil. The existence of such men in all cases might, and in some cases does, exemplify that ideal of "plain living and high thinking" which the poet could only see in the past. We have it amongst us, though the cases are few; science and poetry and thought making noble and beautiful this common working life.—*Lalor's Money and Morals.*

#### PREPARATION OF FOOD FOR HOGS.

It is a general opinion and believed to be founded on correct observation, that the food given to hogs should be slightly soured, in order to produce the greatest possible effect in improving their condition. In corroboration of this opinion, in Germany and some other parts of Europe, horses are fed on bread that has been fermented so as to be a little soured, and it is said to be more economical than feeding them with grain.—Bread which is brought by the process of fermentation very near to the point of acidity, and that in general use amongst our German population, quite to that point, is well known to be more wholesome and much more nutritious than unleavened bread. Hence it is not unreasonable to suppose that all farinaceous substances fed to animals would be more economically and beneficially applied by being first slightly fermented. In order more effectually to accomplish this object in preparing food for hogs, two tubs should be procured of such size as would be adapted to the number to be fed, in which to prepare their food; these should be used to feed from, alternately; the materials in one would be undergoing the necessary preparation, while feeding from the other. The weather being generally cool while hogs are fattening, the process of fermenting progresses slowly and if it is very cold, it is entirely suspended, unless artificial means are resorted to, to keep it up. Pieces of stale bread, that are no longer fit for family use, and which find their way into the swill tub, are uniformly found to put the whole contents into a state of fermentation, if suffered to remain for a few hours. This has suggested the opinion that a small quantity of yeast which is a cheap article, might with advantage be added to the contents of the tub containing the food for swine, in order to more quickly and thoroughly bring it into a complete state of fermentation and advance

it to slight acidity before it is fed. This addition need not often be made, provided the tub was replenished with food before it was quite emptied of its fermented contents, and in this way it could be kept up during the feeding season. Corn or other grain that has been steamed, boiled, or well soaked, is very susceptible of the influences of yeast. Starch makers and distillers use it in order to prepare the grain, so that they can extract their respective articles of manufacture from it with more facility, and in greater quantities; and it appears reasonable to suppose the stomachs of animals would have their labor abridged, and would be enabled to extract a greater quantity of nutriment from a given quantity of grain or vegetable matter thus prepared, than when it is fed to them in the usual way.

The stages of fermentation are the saccharine, the vinous, the acetous, and the putrefactive; the first is exhibited in malting of barley, which is rendered sweet by it; the second is shown in the working of cider or beer; the third is noticed in the souring of bread, and in the formation of vinegar, and the fourth is discovered in the decomposition of bodies generally. In the preparation of food for hogs, it is believed it should advance to the third stage but not pass through it, for after it enters the fourth and last stage of fermentation, it would be very prejudicial to the health of animals, and could not contribute to their nourishment in any way whatever.—*Farmers' Cabinet.*

#### SUSCEPTIBILITY OF ANIMALS TO ATMOSPHERIC CHANGES.

In the common sensations of life we perceive a distinction according as the exciting cause is agreeable or otherwise, whether it presents itself as pleasure or dislike, bodily strength or weakness, activity or fatigue, warm or cold, by pressure or tension of the atmosphere, &c. By these combinations of sensations all animals, in which they are strongly developed, are enabled to anticipate atmospheric changes before the most delicate instruments give any indication of them and in a minor degree the same is traceable in persons of great nervous susceptibility. In the animal world it extends not only to creatures of the land and of the air, but also to those which inhabit the water.

The actinia throw out their feelers and expand themselves when a continuance of fine weather is to be expected, but withdraw and contract themselves, even in a room, when a change is impending. The muscles, before the approach of storm, spin several new threads to secure their hold on the rocks; and leaches, rise to the surface of the water before rain. Spiders enlarge their webs during fine weather, but spin only short threads; work seldom, or hide themselves in corners, during rain. Many beetles, by their active flight and humming sound, give tokens of the marrow's brightness. Before rain bees remain either in their hives or in the neighborhood of them; and ants convey deep into their cells the pupæ which they expose to the sun in fine weather.

The leeches rise anxiously to the surface of the water before a storm, and hence in Germany they

are called weather fish, and are kept in glasses. where by their uneasy movements they denote a change twenty-four hours in advance, and from the same cause many fish forsake the sea for the rivers; the groundling is roused into activity; the silurus leaves the deep water; and the eels become lively. If the lightning strikes the water the perch sickens and dies; the snake and the slow worm are restless before a storm; toads leave their concealment before rain; ducks are busily active, and swallows fly lower.

Before a storm breaks forth many birds, such as the crossbill and plover, are uneasy, and show themselves less, and while many species of water-fowl hurry for shelter to the shore, the petrel, as if rejoicing in the coming conflict of the elements, dashes forth and defies its power. If the atmosphere be lowering in the morning, pigeons feed rapidly and return to their cots; and the hare hides itself, but the mole comes to the surface of the ground, and the squirrel seeks its nest and shuts its entrance. This susceptibility of atmospherical changes influences also materially the natural economy of some animals; the wild rabbit, for instance, which feed chiefly in the evening or at night, comes forth at noon-day, if the weather portends rain, and loses its natural timidity in its eagerness to procure food.—*Thompson's Passions of Animals.*

#### ON THE ARTIFICIAL PRODUCTION OF FISH IN OUR RIVERS.

We give the following very interesting account of the artificial production of fish, from the *Farmer's Magazine*. The subject is attracting much interest abroad, and will doubtless be practically tested here.

Not unconnected with the Agriculture of the country, and certainly not uninteresting to the rural improver, are the wonderful discoveries just brought to bear on the artificial production of fish in our rivers. The whole subject seems to open out a source of profit to the speculator, of interest to the naturalist, and of the increase of nation's food. The capture of salmon—brought now to perfection so great, that our rivers are about denuded of that prince of fishes—ceases to be either skillful or surprising before the schemes in operation for breeding that fish. Not only has it been tested by the stocking of the French rivers and streams of the Vosges, the Moselle, the Upper and Lower Rhine, but the spawn has been successfully transported to New Zealand.

A recent number of the *Journal of the Highland and Agricultural Society of Scotland* attributes the discovery of the plan to Mr. John Shaw, of Drumlanrig, so far back as 1833, and further proved by the Rev. D. S. Williamson, ten years afterwards. But the scientific world seems to have been still earlier at work; for, in 1764, Professor Jacobi, of Berlin, discovered that the roe of fish was fecundated after the ejection by the female; and more that the roe and milt extracted even from dead fishes possessed the vital power, and even when dead two or three days that this power is not lost. The Professor also mentions how fish may be thus introduced into new districts, and even carried to other countries.

During the course of last summer, a small pamphlet, on the artificial production of fish was published by Reeve & Co., which called particular attention to the French adoption of the joint discoveries of the German professor and the Scottish gardener, in filling the French streams and rivers with millions of fish of the most valuable kind.

Mr. Boccius last year undertook the arduous task of transporting fecundated trout spawn to New Zealand. Gravel was placed in large iron boxes, with a supply of river water, in order to effect the necessary change; for in water totally stagnant the fish will not be produced. Owing to the warmth of the tropical atmosphere, in the journey the young were produced before the ordinary time. The usual period varies from 70 to 100 days, according to temperature; but in this case we believe Mr. Boccius found them produced in about 42 days. The effect of a stream was obtained by constant dropping from a tank above the iron box; the water in which was, we believe, purified by the valisneria.

The originators of the French practice were two fishermen of the names of Gehin and Remy, of La Bresse, who, finding the fish fail in their streams, began to collect the spawn and apply the milt themselves, which they deposited in boxes or baskets full of holes, and placed them in situations of safety in running streams. A French paper says, "Applying this operation, the year afterwards, to a great number of fish, they obtained several thousand trout; and, in a year or two more, the numbers had literally increased to millions."

The French government considered the matter of sufficient importance to take it up, and these two fishermen were taken into its pay, and made to apply the principle to the streams of the districts we have mentioned. The same paper goes on to say; "They have done so with the most singular success; rivers and lakes, in which there were no fish, now literally teem with them."

The plan is to be further encouraged. A commission of *savans* is appointed to superintend the process. Salmon, perch, tench, and even lobsters are to be *domesticated*—so far at least as being bred and reared, out of the reach of their numerous enemies.

Perhaps no animal will multiply so fast as the fish. The tenches produces 38,000 eggs, the mackerel 546,000, the cod fish 1,357,000. The herring produces also vast numbers, and, if only 2,000 of any one of these came to perfection, there would be in the second year, 12,000,000, in third 2,000,000,000. To protect only, therefore, is to ensure the production of millions of fishes; but how any fish now happens to escape their enemies, natural and artificial, seems positively more wonderful than their powers of production.

The breeders of fish artificially in this country are Mr. Boccius, Mr. Gurney, of Carshalton, and Mr. Young, of Lochshin. What should hinder the plan being tried by all the landed proprietors near the sides of all the rivers in this and the sister kingdom? and especially why not try to introduce the salmon into rivers where it has not yet been found? Mr. Shaw appears certainly to have been the first to show the parr and the smolt to be only stages of the salmon; and to prove that by the construction of side ponds,



with a small stream running over them, with sufficient water to keep them covered, but not to be two deep, so as to favour the development of the spawn with as much rapidity as possible, the work will be done. The small fish will thus be preserved from their larger enemies until they have an opportunity of shifting better for themselves, and vast supplies will be afforded to the sea, to return again, either to the same spot, or most certainly to the same river, in another year. The grisle, or young salmon of from  $2\frac{1}{2}$  to 3 lbs. weight, has been sent to market, the spawn from which they have come having only been deposited in the preceding October or November, three months of this to be allowed for hatching—and often a longer period. A grisle weighing 6 lbs. in the month of February after spawning, has, in its return from the sea in September, weighed 13 lbs; and, according to Jessie, a salmon fry of April will in June weigh 4 lbs., and in August 6 lbs.

Taking the rapid growth, the immense powers of reproduction, and the command which the artificial production seems to have upon the fish, we hardly know a subject of greater national importance than the encouragement of these invaluable experiments—if so they can now be called, after success so abundant.

We would strongly urge the thorough investigation of the subject, and the construction of breeding-ponds near the heads of our principal rivers, properly secured. The experiment has interest in itself enough to repay the trouble—for expense there seems to be but little—and, if Jacobi be right, almost every purchaser of a male and female salmon has the power of putting the process into operation. Might not the Royal Agricultural Society of England investigate this subject with profit and advantage both to landlord and tenant?

#### LIFE IN PHIDADELPHIA.

Some person on a tour from Davenport, Iowa, to the City of Brotherly Love, writes the following interesting letter to the *Davenport Gazette*, giving a condensed view of mercantile life, so far as he has gained information:—

Philadelphia, March 27, 1853.

Dear Sir: Here am I in the city of "Brotherly Love;" and notwithstanding they frequently get up a riot here, and more frequently cut one another's throats, the mass of the citizens appear to be quite as orderly and intelligent as the citizens of Davenport. But it is evident that the wealthy portion of the population, as well as the majority of the middle classes, consider their principal mission on earth to be to dress fine and promenade before each other, in order to exhibit their good looks and the merchandize they carry on their backs, in the shape of silks, satins, velvets, broadcloths and various articles of silver, gold and stone ware. I have taken considerable trouble in collecting statistical information, respecting the actions of, and the manner in which these people live; their ability to keep their families, and the preparations they are making for old age, &c. I have ascertained that the children of the wealthy are most generally brought up in extravagance and idleness, that they

receive but little instruction that tends to their future usefulness, and the example of the parents of a majority of the families is rather a discouragement than an advantage to their offspring. The children are taught to consider that music, dancing and dressing, according to the fashion of the day, are the most essential portion of their education; the consequence is, that the third generation run through with their grandfathers' estate; that is, provided their fathers did not spend it all before them; and I now find the fourth and fifth generations, of once wealthy families, boating oysters from the bay, and stitching broadcloth for their now more wealthy neighbors, who are descended from honest hard-fisted blacksmiths and bricklayers. It may not be uninteresting to you to know how the numerous class, the shopkeepers—big and little—work their way through the world. Dress and extravagance are the support of many of this class,—they eat, they drink, they dress and die as they began, with a stock of goods purchased on time, and renewed from year to year throughout their lives. But, you may say, are there not a few of this numerous class, who surround with their neat fancy shops one hundred squares of that great city, who better their condition by their business? Yes, there are a few, and but a few. I have, after much inquiry, ascertained that in the wholesale department seventeen out of each hundred fail without paying their debts; that twenty-one out of one hundred fail, but pay their debts; that thirty-eight out of one hundred are able to keep their families and square with the world, but nothing more; nineteen out of one hundred retire, and are classed with the upper ten; three out of one hundred are classed with the one hundred thousand and upwards; two out of one hundred class with the half million and upwards. In the retail department twenty-two in one hundred fail; eighteen in a hundred, after paying rent, cannot, with every exertion and strict economy, procure a sufficiency of proper food, but subsist by depriving themselves of certain articles, such as butter, fruit, groceries, &c.; nineteen in a hundred are enabled to keep their families respectably and pay their debts; fourteen in one hundred dress extravagantly, visit the watering places, and live up to their income; seventeen in one hundred leave a stock of goods paid for, and a home for their children; nine in a hundred retire with the upper ten; and one in a hundred rates with the half million and upwards.—Yours, &c., A. C. F.

**IMPORTANCE OF STRAW.**—Twenty tons of straw will, by littering and foddering well-fed cattle, make at least 100 tons of dung. Good crops of wheat, barley, and oats respectively may yield 20, 18, and 25 cwt. of straw per acre. But of course the produce is exceedingly variable on the same soils in different seasons, and on different soils in the same season.

**LIQUID MANURE.**—A writer in the *Rural New Yorker* states that in Scotland it has been ascertained that the quantity of liquid voided by one cow daily, is  $2\frac{1}{2}$  gallons, or about 450 gallons in six months; but if fed upon turnips, one cow will give a gallon of urine for every twelve pounds of turnips consumed.

## HINTS ABOUT FURNITURE.

The prevailing evil of the present day is extravagance. I know very well that the old are too prone to preach about modern degeneracy, whether they have cause or not; but, laugh as we may at the sage advice of our fathers, it is too plain that our present expensive habits are productive of much domestic unhappiness, and injurious to public prosperity. Our wealthy people copy all the foolish and extravagant caprices of European fashion, without considering that we have not their laws of inheritance among us; and that our frequent changes of policy render property far more precarious here than in the Old World. However, it is not to the rich I would speak. They have undoubted right to spend their thousands as they please; and, if they spend them ridiculously, it is consoling to reflect that they must, in some way or other, benefit the poorer classes. People of moderate fortunes have likewise an unquestioned right to dispose of their hundreds as they please; but I would ask, Is it wise to risk your happiness in a foolish attempt to keep up with the opulent? Of what use is the effort which takes so much of your time, and all of your income? Nay, if an unexpected change in affairs should deprive you of a few yearly hundreds, you will find your expenses have exceeded your income; thus the foundation of an accumulating debt will be laid, and your family will have formed habits but poorly calculated to save you from the threatening ruin. Not one valuable friend will be gained by living beyond your means, and old age will be left to comparative, if not utter, poverty.

There is nothing in which the extravagance of the present day strikes me so forcibly as the manner in which our young people of moderate fortune furnish their houses.

A few weeks since, I called upon a farmer's daughter, who had lately married a young physician of moderate talents, and destitute of fortune. Her father had given her, at her marriage, all he ever expected to give her, viz., \$2,000. Yet the lower part of her house was furnished with as much splendor as we usually find among the wealthiest. The whole two thousand dollars had been expended upon Brussel's carpets, alabaster vases, mahogany chairs and marble tables. I afterwards learned that the more useful household utensils had been forgotten; and that, a few weeks after her wedding, she was actually obliged to apply to her husband for money to purchase baskets, iron spoons, clothes lines, &c., and her husband, made irritable by the want of money, pettishly demanded why she had bought so many things they did not want.

Did the Doctor gain any patients, or she a single friend, by offering their visitor water in richly cut glass tumblers, or serving them with costly damask napkins, instead of plain soft towels? No; their foolish vanity made them less happy, and no more respectable.

Had the young lady been content with Kidderminster carpets, and tasteful vases of her own making, she might have put one thousand dollars at interest; and, had she obtained six per cent., it would have clothed her as well as the

wife of any man, who depends merely upon his own industry, ought to be clothed. This would have saved much domestic dispute; for, after all, human nature is human nature, and a wife is not better beloved—because she teases for money.—*Mrs. Child.*

## AUSTRALIA A LAND OF CONTRARIES.

If there be any land on the face of the earth, which to an Englishman's eyes must appear a land of contraries, as compared with his own country. Australia is surely that land. It is our literal antipodes. When it is day with them, it is night with us, and when we are all hard at work, they are "in the arms of Murphy." When they have their longest days, we have our shortest; and when it is summer with them, it is winter with us. Their Mad-day is in autumn; and while our trees are budding, theirs are in the sear and yellow leaf. They begin to wear their summer dresses in October, and commence putting on top coats and pea-jackets in June.

Their Christmas is in summer; and when musquitoes are flying about, and the sun's heat is severe, the Yule-log, as may be easily imagined is somewhat superfluous; and to dance Sir Roger de Coverly at Christmas, with the thermometer standing at 95 in the shade—think of that, shade of Christmas! Without clear frost, Christmas in England is nothing; but Christmas with musquitoes and hot winds! "Snap-dragon" in the dog-days! hot, spiced claret in the height of summer!

The climates, winds and seasons in Australia, are all reversed. The North wind does not blow cold, as with us, but hot like the sirocco. The south wind—

The sweet South,  
That breathes upon a bank of violets,  
Stealing and giving odor,

in Australia brings rain, sleet and hail. The sun courses over head in the North, and not in the South; in the North are the tropics, in the South are the polar regions. Australian poets have to reverse their tropes and instead of singing of—

Old January wrapped well  
In many weeds to keep the cold away,  
they sing in the language of an Australian bard—

When hot December's sultry breeze  
Scarce stirs a leaf on yonder trees!

Soils, streams, vegetables and animals are equally puzzling in Australia. The richest soils are often found on the tops of the hills. The valleys are cold, and the hill tops warm. Rivers flow from the neighbourhood of the coast into the interior, where they become lost. Trees don't shed their leaves, but only their bark; and most of them in Australia afford no shade. The cherries grow with their stones outside. The birds don't sing, the dogs don't bark, the bees don't sting, the flowers don't smell. The mole (ornithorynchus) is a fish and the kangaroo carries its young in a nest attached to its body. Australian swans are black, and Australian eagles are white. Cuckoos coo in the night, the owl hoots in the day, and the Australian jackass is a bird! But above all things, the working people in Australia are not poor! That is perhaps the most crowning and satisfactory contrariety of all.—*English Paper.*



## WOOD GAS.

The city of Wilmington, North Carolina, is now, for its size, the cheapest lighted city in the United States. The whole apparatus, including mains, gasometer, &c., cost but \$18,900. This includes their transportation from Philadelphia, with, also, the pay and passage of workmen. By reference to Ure's Chemical Dictionary, a standard work, it will be found a ton of coal or thereabouts yields about 10,000 cubic feet of gas. This is after eight hours' distillation from the best selected coal. By actual experiments it has been found that a cord of wood will produce 92,000 cubical feet of gas. It will be perceived at once this renders wood gas much cheaper. Besides, it is a well ascertained fact, that wood-oils in the production of light are as 7 to 3 in favor of ligneous oils over coal. One reason that they have been so little used is, that they require to be distilled from wood previous to use; but this difficulty, it is said, has been obviated by a simple and cheap apparatus, invented and patented by Dr. McConnell. This invention places the use of gas within the reach of all rural villages, and will render every one, who chooses to be so, *independent of the gas companies*, for by its means they can manufacture their own gas, at a much cheaper rate than it can now be supplied by any company chartered within the United States. This gas has not the offensive smell of that produced by coal, and can be passed directly from the retort through the washer or condenser to the gasometer without further purification.

This discovery promises to open a new field of commerce; the vast amount of pine wood in Lower Virginia and North Carolina, now considered of no value, will be brought into market for the purpose of manufacturing gas, and the charcoal left after destructive distillation will pay the whole expense for manufacturing. Wood can be purchased in North Carolina, and delivered at Wilmington, or in Pimlico Sound, for one dollar per cord; the transportation, &c., would not bring the cost up beyond four dollars. Wood, at five dollars per cord, yields 92,000 cubic feet of gas; coal, at six dollars per ton, only 10,000 cubic feet. An apparatus for manufacturing wood gas could be put up for one-seventh the cost of that for manufacturing coal gas. It is estimated that the city of New York might be lighted for one dollar a thousand feet, and yield a handsome profit to the manufacturers; whereas the city now pays three dollars per thousand feet. We understand that a company has been projected in this city, by W. D. Porter, Esq., a son of Commodore Porter, for profitable employment of the patent.—Persons desirous of acquiring information upon the subject, may procure it by applying to him at his residence, No. 264 Tenth street, or at the office of Edmund J. Porter, No. 6, City Hall place. *New York Evening Post*.

## HOW DO PLANTS MIX?

Some remarks which appeared under the above head, in this paper of February 26th, gave rise to a communication on "Mixing at the Root," in the number for March 19th. A question in reference to the subject having been submitted to

Professor Gray, of the Cambridge Botanic Garden, he has kindly furnished the following note:

No principle of vegetable physiology known would justify the conclusion that plants can "mix" or cross-breed from the root or tubers, by being planted together. It would be the same as if a graft of one variety of apple set in a tree affected the *ungrafted* or natural branches.

The fact adduced by your New Jersey correspondent is doubtless capable of explanation on other grounds. In herbaceous plants, particular sorts or varieties produced by long-continued cultivation, frequently show a tendency to revert to their original form: some individuals will show this more than others, and hence the difference in different potatoes of the same field. These differences of color, &c., are not permanent and stable, but are liable to vary from year to year, more or less, from inherent causes; but such variation gives us no reason to infer that one individual is affected at all by another growing near it.

—*Boston Cultivator*.

ASA GRAY.

A GREAT BORER.—The shipworm, or teredo, is a bivalve shell-fish, which, as if in revenge for the unceasing war waged by mankind against its near relative, the oyster, seems to have registered a vow to extinguish the vitality of as many human beings as lies within its power. That power, though exercised by an insignificant fish, is a prodigious one; for, ever since mankind turned attention to nautical affairs, and went to sea in ships, the teredo has unceasingly endeavored—unfortunately with too much success—to sink those marine conveyances. Nor have vessels alone been the object of attack; for many a goodly landing pier has it riddled into shreds, not to speak of bolder attempts, such as the endeavor to swamp Holland, by destroying the piles of her embankments. The shipworm is the only mollusk that has ever succeeded in frightening politicians; and more than once it has alarmed them effectively. A century and a quarter ago, indeed, all Europe believed that the United Provinces were doomed to destruction, and that the teredo was sent by the Deity to pull down the growing arrogance of the Hollanders. In our own country, although we undergo no danger of being suddenly submerged, as our Dutch neighbors might be, we have suffered seriously in our dockyards and harbors by the operations of the shipworm, to which the soundest and hardest oak offers no impediment. As a defence against it, the underwater portion of the woodwork in dockyards has been studded with broad-headed iron nails.—*Westminster and Foreign Quarterly Review*.

DEPTH OF DRAINS.—A writer in the *Agricultural Gazette*, who represents that he has had great experience in drainage, concludes that the proper depth of drains must depend on the texture of the soil—that the depth should be the point where saturation is arrested. Experienced persons, he says, can readily tell where this point is; and those inexperienced may easily ascertain it by having three short drains made early in autumn—one 2½, one of 3, and one of 4 feet deep. The drains that first discharge the water after a rain will be at the right depth for that soil.

**AGE OF ANIMALS.**—A bear rarely exceeds twenty years; a wolf twenty; a fox fourteen or sixteen; lions are long lived—Pompey lived to the age of seventy years; a squirrel or hare seven or eight years; rabbits seven. Elephants have been known to live to the age of 400 years. When Alexander the Great had conquered Phorus, King of India, he took a great elephant which had fought valiantly for the king, named him Ajax, dedicated him to the Sun, and let him go with this inscription 'Alexander, the son of Jupiter, hath dedicated Ajax to the Sun.' This elephant was found with this inscription 350 years afterward. Pigs have been known to live to the age of thirty years; the Rhinoceros to twenty. A horse has been known to live to the age of sixty-two, but averages twenty to thirty. Camels sometimes live to the age of one hundred. Stags are long lived.—Sheep seldom exceed the age of ten. Cows live about fifteen years. Cuvier considers it probable that whales sometimes live one thousand years. Mr. Mallerton has a skeleton of a Swan that attained the age of two hundred years. Pelicans are long lived. A tortoise has been known to live to the age of one hundred and seven.

**THE PLANT NAME POSTS IN KENSINGTON GARDENS.**—The other day an old lady took one of these for a head stone, and, after reading two long Latin words, said, "Oh, he was evidently a foreigner, but it's a shame they didn't give him Christian burial." As we walked through, the other morning, and very pleasant the green turf looked, when the sun was good enough to touch it, we heard a positive repetition of the error.—A stolid-looking woman was studying one of them, and we heard her read, in a well-satisfied tone, rightly or wrongly we did not stop to see—"*Rosa Tormentosa*?" Ah! that was a very naughty girl, you may depend on it."—*Agricultural Gazette*.

**MR. EDITOR:**—Mr. Rhodes, dairyman, of London, (England,) about the year 1830, made a dreadful oath that he would have upwards of a thousand live milch cows in his dairy, but strange to relate, he never succeeded to get together more than 999! If he purchased a number, say 10, before he got them to his dairy he would find some of his cows dead, leaving only (or less than) 999. Your notice in yesterday's paper, of the large dairy of 300 cows, at Norwich, Chenango county, reminded me of the above circumstance.—*From the Buffalo Express*.

**CEMENT FOR STONE WARE.**—Gelatine is allowed to swell in cold water, the jelly warmed, and so much recently-slacked lime added as is requisite to render the mass sufficiently thick for the purpose. A thin coating of this cement is spread while warm over the gently-heated surfaces of fracture of the articles, and let dry under a strong pressure. What oozes out is removed directly with a moist rag.—*Chemical Gazette*.

**GUANO.**—The Governor of the Falkland Islands has just sent home despatches announcing that guano has been discovered in large quantities in those islands. The climate there being less dry than at Lobos, the guano is not of equal value to the Peruvian product; but there seems to be no doubt that this discovery in the Falkland Is-

lands will prove to be one of great value, both in a trading and an agricultural sense.—*Daily News*.

John Johnston, an extensive farmer near Geneva, has now on his farm 25 miles of drains. His son-in-law, Mr. Snow, on an adjoining farm, has laid 88,000 tiles and drained 200 acres of his land. Mr. Johnston says, "the whole country ought to be drained;" a remark which comes nearer the truth than most figurative ones do.

## Poetry.

### SATURDAY EVENING.

How sweet the evening shadows fall  
Advancing from the west;  
As ends the weary week of toil,  
And comes the day of rest.  
Bright o'er the earth the star of eve  
Her radiant beauty sheds,  
And myriad sisters calmly weave  
Their light around our heads.  
Rest, man, from labour; rest from sin,  
The world's hard contest close  
The holy hours with God begin;  
Yield thee to sweet repose.  
Bright o'er the earth the morning ray  
Its sacred light will cast;  
Fair emblem of the glorious day  
That evermore shall last.

### GUTTA PERCHA.

1. My parent died, when I leaped from her side,  
To fill mankind with wonder;
2. And now I abound in the wide world around,  
The green-sward above and under.
3. I hold the flower in the sunny bower;
4. I shelter the dead in their graves;
5. I circle the hair of the maiden fair;
6. And bid defiance to knives.
7. The miser his gold often gives me to hold;
8. I aid to extinguish the fire.
9. I'm chased o'er the green, where the school-boy is seen;
10. I wait at the top of the desire.
11. I ride on the wave, the sailor to save,  
When he shrieketh aloud in despair;
12. I whirl the machine, whose arms, dimly seen,  
Hiss as they fly through the air.
13. I've been tried, and am cast with felons at last;
14. I am balm to the wounded and torn;
15. I rival the oak; (16) the tell-tale I cloak;
17. I am fashion'd as high and low born,
18. I constantly mind the sightless blind;
19. Many garments my long arms bear;
20. By the sick man's bed, (21) by the ship's mast-head—  
In various forms I am there.
22. Deep in the earth, though unseen in my worth,  
I faithfully serve mankind;
23. I bear the whisper of the softest lipser,  
24. And hold that which traceth the mind!
25. When the emigrant lands on far-off strands,  
Perchance he treadeth on me,  
26. On the rich man's table, (27) in the horses' stable,  
My forms you may frequently see!  
Now I challenge your mind my secret to find,
28. Though I travel along by your bed,
29. I come from the south, (30) I may dwell in your mouth,  
31. Or may rest on the top of your head!

The following explanation may serve to illustrate the above:  
1. Refers to Gutta-percha trees, they are tapped, and the article which is then a milky juice, exudes. 2. It is used both above and under ground. 3. Gutta-percha flower-pots. 4. Lining for coffins. 5. Bonnet caps. 6. Policemen's staves. 7. Money bowls. 8. Water buckets and Engine pipes. 9. Cricket balls. 10. Mugs. 11. Life buoys. 12. Machine driving belt. 13. Indestructible vessels for the use of prisoners. 14. Balsam for slight wounds, instead of sticking-plaster. 15. Ornamental mouldings. 16. Coating of the telegraph wires. 17. Medal lions and casts of celebrated and notorious persons. 18. Cord for window-blinds. 19. Clothes-lines. 20. Utensils for sleeping apartments. 21. Cordage and speaking-tubes. 22. Pipes for drainage. &c. 23. Acoustic tubes. 24. Inkstands. 25. Soles. 26. Ornamental dishes. 27. Buckets and harness. 28. Noiseless curtain rings. 29. From Singapore, &c. 30. For filling decayed teeth. 41. "Southwester" hat.



## EDITOR'S NOTICES.

## POSTMASTERS AND SUBSCRIBERS.

In consequence of complaints having been received, of Postmasters exacting postage for the *Agriculturist*; we would, for their future guidance observe, that by the special permission of the Post Master General, the *Agriculturist* is transmitted to Subscribers FREE OF CHARGE.

Received T. T. Warwick; W. R. Report of Hamilton Farmers' Club.

William Hutton, Esq., Secretary of the Board of Statistics, Quebec, will please accept our thanks for frequent numbers of the *Dublin Advocate and Industrial Journal*.

Mr. Aaron Overholt, of Rainham, will please accept our thanks, for a June and December number of the *Agriculturist*, for 1852.

## TORONTO HORTICULTURAL SOCIETY.

We have space only for a few words in reference to this deservedly popular and valuable Society, whose Second Exhibition, for the present season, was held in this city on the 30th ult. The specimens of fruit, vegetables, and flowers exhibited, were pretty numerous, and generally of excellent quality. This young Society is richly deserving of a liberal patronage.

## THE WEATHER AND THE CROPS.

A most beneficial change has recently taken place in the weather; the long drought which was keeping back all kinds of Spring crops, has been succeeded by warm and copious showers, so that vegetation is now making rapid progress. We think, however, that Spring grain must prove, in many localities, somewhat short, let the weather continue ever so favorable. From all parts the accounts of the wheat crop are encouraging, with, at present, very few indications of rust. The late rains have much improved the potatoes, which are in a backward state. Hay will be abundant. A correspondent residing near Cobourg, writing under date June 28th, observes:—

"Since I last wrote you, the weather has been dry and warm, and the Spring crops have made rapid progress; they have not suffered near so much from our very wet Spring as was anticipated. To-day we have had fine rains (though rather cold), which was much wanted to start the turnips and other root crops. I see the rains have laid a part of my fall wheat, which was very heavy. Fall wheat, as far as I have seen, looks uncommonly well, and should it escape rust and other accidents, I think it will be a very abundant crop."

The grain market keeps steady, with an upward tendency; though from the latest intelligence from England, we see that prices are somewhat receding.

July 1st, 1852.

DURHAM STOCK.—We invite the special attention of our readers to Mr. Wade's advertisement in another column. The Messrs. Wade are well known as enterprising and discriminating importers and breeders,

whose stock have justly attained a high standing. Our readers will share with us in the regret with which we have heard of Mr. Ralph Wade's loss of some fine animals at sea, purchased, we understand, in Scotland. The pecuniary loss which Mr. Wade will sustain, we are informed, will amount to about £300. He has got some fine improved Leicester Sheep. We sincerely hope that Mr. Wade will receive such an amount of public support in his praiseworthy enterprise as will more than reimburse the heavy losses often incidental to importation.

## DEATH OF THE EARL OF DUCIE.

Our last English exchanges have brought us the melancholy intelligence of the decease of this excellent nobleman and distinguished agriculturist. This sad event took place on the 2nd of June;—his Lordship's health having suffered for years from severe periodical attacks of rheumatic gout. Earl Ducie has been taken away almost in the prime of life, having but just completed his 51st year. Whether regarded as an improver of agricultural implements,—of which the *Cultivator* that bears his name is an instance,—a successful breeder of Durham Stock, a liberal land'ord, or a useful and active member of society, Lord Ducie's memory will be long cherished by his countrymen. We hope to give more particulars of this distinguished man, as an agriculturist, in our next.

## ADVERTISEMENTS.

IMPORTANT TO  
BREEDERS OF STOCK.

THE Subscriber offers for sale Two Thorough Bred Short Horn DURHAM BULL CALVES, one 20 months old, a beautiful Roan Colour, splendid proportions, a descendant of the much celebrated "Belted Will" of England—the other about two months old, white, of unequalled Symetry and beauty, and is a descendant of "Belted Will," his Dam was got by "Bellville," the Champion of England, Scotland and Ireland, and was imported to this Province in 1851, and the first of Mr. Hopper's, celebrated herd, ever brought into Canada.

## ALSO:

Two other Calves of the same unequalled breeding 3 weeks old.

Satisfactory certificates of pedigree will be furnished. For further particulars application may be made to

JOSEPH WADE,

Spring Cottage, near Port Hope, Canada West.

June, 22nd 1852.

3-m.

BUREAU OF AGRICULTURE,  
Quebec, 28th May, 1853.

HIS EXCELLENCY THE GOVERNOR GENERAL has been pleased to appoint

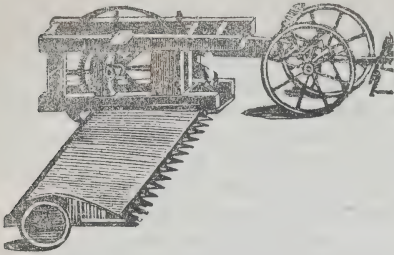
Messrs. Whitman & Wheelock,

OF NO. 100 FRONT STREET, IN THE CITY AND  
STATE OF NEW YORK,

To be the Agents to Receive and Bond, or Pay Duties on all such Goods as may be sent from Canada to the approaching INDUSTRIAL EXHIBITION AT NEW YORK.

## IMPORTANT TO FARMERS.

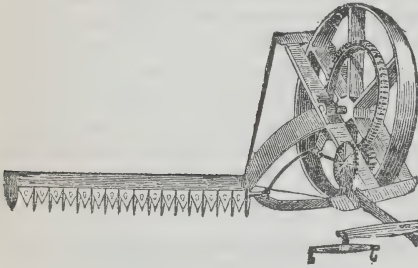
HUSSEY & BURRALL'S



IMPROVED REAPING MACHINES.

THE SUBSCRIBERS having opened an Agricultural Warehouse and Seed Store in Port Hope, C.W., are now manufacturing the above Machines extensively. Also

KETCHUM'S



MOWING MACHINE,

On an improved scale of stopping the motion on the knives by means of a lever.

These are the machines which have taken the first Prizes at the New York State Agricultural Test at Geneva last harvest, in competition with *eleven* different kinds of Reapers and Mowers, and they have now become the *standard* and *model* Machines, while others are altering and experimenting with doubtful success.

They are warranted to give satisfaction, and a fair and thorough trial is offered before the sale is made valid.

Any person wishing to purchase one of those Machines can obtain satisfactory information as to their performance and satisfaction by referring to the following gentlemen Farmers, who have used these Machines, and to whom they trust for an impartial repute:—

John Wade, Esq., P. Hope,	Seir VanCamp, Bowman-
Nath. Nichols, Cobourg,	ville.
George Black,	R. Simpson,
John Middleton, Clarke,	J. B. Warren, Oshawa,
Z. Pollard,	Joseph Gould, Whitby,
Sam'l Wilmot, Darlington,	John Cameron, York Mills
John Smart,	McIntosh & Walton, Tor-
	onto,

And several others whose names are omitted. They also keep on hand the *Plows* which have taken the first Prizes at the Provincial Fair of Toronto, in 1852, (in a variety of 14 different sizes) and have since proved themselves above competition.

Wheat Drills, Seed Sowers, Harrows, and Cultivators for one or two horses, and all manner of Agricul-

tural Implements and Machines perfected for the use of the Farmer, from an Apple Parer to an eight horse Power.

Farm Produce, such as Peas, Timothy Seed, and Clover Seed, taken in exchange for machinery, and a liberal discount for cash. All articles warranted, or price refunded. Farmers wishing to purchase Machines will do a favor by ordering immediately so as to avoid any delay or disappointment.

JOHN RAPALJE & Co.,

Port Hope, C. W.

Messrs. McIntosh & Walton, of Toronto, are Agents for the above Firm, and have their implements and machines for sale at low prices.

April, 30th, 1853.

3in.

## PURE BRED MALE STOCK,

AT

PRIVATE SALE AT MOUNT FORDHAM

*Eleven Miles from the City Hall, New York.*

I WILL Sell and Let from 10 to 12 Short Horned Bull Calves; 4 Devon Bulls and Bull Calves, and from 12 to 15 South Down Rams. The Annual Sale by Auction will be omitted this year, as I wish to reserve all the females, having recently purchased another farm, to enable me to increase my Breeding Establishment. My Hog Stock, including all the Spring Litters, are engaged. Catalogues, with full description and pedigrees of the above Bulls and South Down Rams, with the prices attached, can be obtained by the 15th of April next, from the Subscriber, or at any of the principal Agricultural Stores, or from the editors of the principal Agricultural Journals.

L. G. MORRIS.

March 23rd, 1853.

3m

## WANTED,

A FEW DECEMBER Nos. of the "AGRICULTURIST" for 1852. Subscribers who can spare any of the above Nos. will be paid by sending them to this Office.

## The Canadian Agriculturist,

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, to whom all communications are to be addressed, is published on the First of each month by the Proprietor, *William McDougall* at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

## TERMS.

SINGLE COPIES—One Dollar per annum.

CLUBS, or Members of Agricultural Societies ordering 25 copies or upwards—*Half a Dollar each Copy.*

Subscriptions always *in advance*, and none taken but from the commencement of each year. The vols. for 1849-50-51, at 5s. each, bound.

N. B.—No advertisements inserted except those having an especial reference to agriculture. Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.



THE  
CANADIAN AGRICULTURIST,  
AND  
Transactions  
OF THE  
BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. V.

TORONTO, AUGUST, 1853.

NO. 8.

TOWNSHIP OF HAMILTON FARMERS' CLUB

The May meeting of this Club was held at Ball's Inn, Coldsprings, when a large number of leading farmers were in attendance. Among those present we observed Mr. Wright, the President, Mr. Riddell, the Secretary; Messrs. Richardson, W. Weller, M. Eagleson, W. Eagleson, G. Ley, J. Sutherland, D. Sidey, J. Mason, Mr. Perkins, Mr. H. Roddick, Mr. MacIntosh, &c., &c.

AGRICULTURAL EDUCATION.

Mr. RICHARDSON, on whom had devolved the opening of the discussion, apologized for not being prepared, as his time had been wholly taken up by his duties as Assessor. The President, however, had readily consented to supply the want, and he would therefore open the discussion.

The President, Mr. WRIGHT, said that he had not expected to be called upon to discharge the duty of opening the discussion. He had, however, consented, at the request of his friend, Mr. Richardson, and would do the best he could in the matter.

The subject that engaged the attention of the Club at its last meeting, and was to have further consideration to-day, is Agricultural Education, and is of that character that some people may suppose to be above the comprehension of farmers generally. I am afraid the supposition comes too near the truth; for, as a class, it must be confessed we have not kept pace with the mechanic, or indeed with any other profession. Science has offered her services in vain for fifty years; the principles laid down for the guidance of the *practical* farmer have been laughed at; book-farming has been scouted and denounced; and every attempt to improve our practice and brighten our prospects has been baffled by the obstinacy of those for whose special benefit the man of science has

laboured so assiduously,—nay, more, for whose special benefit *a new science has been brought to light.*

The supposed monopoly of practical knowledge by the unread agriculturist is purely imaginary—a creed invented by himself, the very opposite of truth. Almost every profession or calling now practised has had to wade through and defend itself from the same absurd supposition; and it may be safely asserted that in whatever art, theory, as such, is by habitual allusion dishonoured, the average of education is low, and the art itself in its infancy. The progress of an art must depend upon the sciences which govern it, and all accidents of natural circumstances are equally subordinate to natural laws, which it is the progress of science to unfold. The training to the practice of an art without instruction in its principles is not education, but simple apprenticeship. The theory of an art is nothing more, and should be nothing less, than a complete history of these principles so far as they are known, in a form the most convenient for acquirement. Before you trust a tool in the hands of a child, the mind is capable of receiving knowledge which it can never afterwards receive so easily or remember so attentively. The child that would be useless at the plough might be so employed that all the conditions of his future life would be raised and benefited. Knowledge is capital in the most compact and available form in which it can exist; it can never be lost by accident; it is its own security, and will not be squandered intentionally. There is an idea not uncommon among the less informed of the class to which we belong, as well as among other classes, that anything like book knowledge disqualifies the possessor for the ordinary concerns of life. No idea can be more thoroughly erroneous. It is true books cannot teach the use of books, but it is for this very reason that the knowledge they do contain should be laid in for digestion before the hurry of business life commences. If the child asks a

question of his teacher, and he has to consult his books, he might be looked upon as no teacher at all, because when he is expected to be learned he is found to be learning, and an unfavourable conclusion both to books and the man thus hastily drawn,—the expectation being that *common sense* would have supplied the required answer, for *common sense* in any calling is nothing else than a knowledge of the principles ready seasoned in the mind, and capable of clear and handy application. To too many farmers the useful science of arithmetic is a mystery; and when it is considered how necessary a knowledge of figures is to give system and accuracy to every transaction, it is to be lamented that when there is so much facility for acquiring even this wonderfully useful part of education, it is so much neglected. I consider there is nothing more conducive to success in any business than a thorough training in the art of keeping accounts. Bookkeeping is just as necessary to the farmer as to the merchant. A profit and loss account is the “compass” in business; by it only can we avoid the losses and crosses of haphazard management. I do not intend following this subject further in the meantime; it may at some future meeting of this Club be profitably pursued. I think our intention in taking it up was, not to point out the way or the means, but simply to strengthen the hands of those eminently qualified gentlemen engaged in devising means to ameliorate the condition of those who have been too long hewers of wood and drawers of water.

#### ON THE USE OF GYPSUM.

I purpose directing your attention to another subject, which at this particular season will call loudly for immediate consideration: “The proper time to apply gypsum or plaster; the quantity necessary to effect the greatest benefit; with other details connected with this wonderful fertilizer. I am quite sure, you are all ready to entertain it immediately, but before solving the question practically, and to allow a little time for reflection, it may not be amiss to glance at some of the conclusions at which scientific gentlemen have arrived regarding its mode of action. Although gypsum is largely used in this country as well as at home, there is great difference of opinion as to its value as a manure, and amongst learned men contrary theories put forward as to its mode of action. Sir H. Davy held the opinion that its influence on clover and plants of that description is due to their naturally containing a large proportion of sulphate of lime (gypsum or plaster), and on examining the ashes of these plants, he found they afforded considerable quantities of it, and concluded that this substance might form a necessary part of their woody fibre, and that where gypsum failed

to produce good results the soil naturally contained so much of the salt as to render an artificial supply unnecessary. He did not regard gypsum as a source of sulphur peculiarly, but considered the whole salt beneficial to a certain class of vegetables. Liebig “explains its action on the grasses by reference to its power of converting volatile carbonate of ammonia into the more fixed sulphate of the same base; when sulphate of lime is mixed with carbonate of ammonia all smell soon disappears; by a mutual interchange of elements carbonate of lime and sulphate of ammonia is formed, which latter, not being volatile, remains in the liquid. To this power, then, of fixing ammonia, he attributes the action of gypsum as manure, and that in applying it to the land we in fact manure with an ammoniacal salt. Bousingault, another celebrated chemist, propounds another theory, and criticises with great ability both the preceding explanations, and after fully investigating Liebig’s theory concludes that it is impossible to accept his explanation. He shows that the theory of Sir H. Davy, that it (gypsum) acts beneficially on those plants which are rich in the salt is so far consistent with the nature of the plants in question, that the artificial grasses being rapid in their growth would require a ready supply of the mineral substances to them; that gypsum would always form a solution of constant strength, being always dissolved to the extent of 1,500 part of water contained in the soil, and would, under any alternations of drought and wet, be ever ready to administer to the necessities of a rapid vegetation. He proves that the quantity of lime absorbed by clover manured with gypsum was out of all proportion larger when compared with sulphuric acid introduced at the same time, and comes to the conclusion that gypsum acts merely as a means of supplying lime to clover and plants of a similar kind. Thus you see how the most learned men differ as to first principles. We may, however, console ourselves with the fact, that, if the cause be mysterious, the effect is as clear as noon-day; and whilst scientific men fight about the first, we try to settle the grand practical points—the time to apply it to the various crops, and, by an expression of opinion, the quantity necessary, and so on.

As regards the time of applying gypsum to clover meadow, my opinion is that in nine cases out of ten it is applied too early: corroborative of this I quote an experiment by Prof. Korte, which must carry considerable weight coming from so high authority and under the tests of *weight* and *measure*. An equal quantity of gypsum was applied on three equal parts of the same field at three distinct times, a fourth part left undressed, the result was proportionally as follows:



Undressed,	100lbs.
Top-dressed, 30th March	132 "
" " 13th April	140 "
" " 27th April	156 "

Clearly showing a marked difference, when applied after the leaves are well developed, which result may arise from the fact that gypsum laid on the leaves of plants is converted into carbonate and its sulphuric acid absorbed. I have personally made no experiment with gypsum that would justify me in giving an opinion as to the quantity most suitable for meadow, my practice is one barrel to two acres, sown immediately before rain, if possible, and in ordinary seasons like the present, about the 10th of May. Although foreign to our subject I would remark that it will be found good economy to use clover seed much more liberally than is usual; 10 or 15 lbs. per acre is little enough, yet a good bottom and very little plaster will do a great deal of good, besides the immense quantity of vegetable matter easily decomposed for manure, the clover will afford for the succeeding crops. On Indian corn, plaster can be beneficially applied in the hill, and sown after the corn is a foot high its effects are magical. That it adds to the yield of grain I am not prepared to say. Last year I applied it to my potatoes sown in the drills previous to covering up, and on the plants after they were above ground. The last plan did no good whatever, as I found by experiment. I had no rotten potatoes and what remains of my crop are at this day as sound as ever, and the quality excellent. As a manure for the pea crop, plaster is unparalleled, but should be used with caution, and only on very poor soil, or on the short strawed varieties, as it is apt to induce a superabundance of straw. I trust, gentlemen, to be enlightened on some of the points which I have mooted, and will by expressing your opinions freely not only confer a benefit on those present, but, through the press, on our club and on our brethren throughout the length and breadth of our land. He concluded by speaking in high terms of rolling the seed sets of potatoes before planting in plaster, giving each piece a coat as it were of white-wash. This plan had been found to work admirably in the States as a preventative of the rot. He alluded to the success Mr. Campbell had obtained, by planting alternate rows of Indian Corn and potatoes. Mr. Campbell took a field of eight acres, on six he planted potatoes and corn—put three rows of corn, then three rows of potatoes alternately over the whole piece—the two acres he put in carrots, and from the whole piece he had 1510 bushels carrots, 180 bushels of corn and 900 bushels of potatoes. He (Mr. Wright,) said that he did not understand how this was done, but supposed that the corn sheltered the potatoes in their early

stage. He concluded by requesting every gentleman present who had experience in using plaster to give his brother farmers the benefit of it, not only to those present, but to others throughout the country. He hoped that that feeling of diffidence which had been observed at previous meetings would not prevent those present giving their views.

Mr. SIDEY said he generally sowed plaster when the clover was opening out, and on peas, barley and oats; he sowed half a bushel to an acre of peas; he did not agree with the President as to the quantity of clover seed to the acre, he thought 7 or 8 lbs enough, he sowed very little plaster on peas, found a great increase in grain and straw; put plaster on Indian corn after the first hoeing, used a barrel on three acres of clover.

Mr. SUTHERLAND said he was not so sanguine as some were regarding plaster. On his description of soils (very heavy) he found it profitable to sow on new meadow. He, however, had not tested the matter thoroughly. On old meadows he thought that although plaster gave it a start in the spring it did no permanent good. He would not feel warranted in sowing plaster on old meadows on his land; indeed it was not found on the front road between Cobourg and Port Hope to improve the grain, as it had the effect of making more straw and less head. He would sow plaster on clover just as the leaf expanded. In Baltimore, where there was a light sandy soil, he had heard that plaster did most good when sowed in the Fall.

Mr. W. RODDICK said he had not used much plaster on his land, as it was heavy and he thought it succeeded best on light soils. He had tried putting it on potatoe seed when cut with good results. On peas, the crop was increased one-half on light soils by using plaster. His practice on heavy land was to sow on clover only the first year; plaster did not do much good on timothy; had used plaster on turnips and carrots with excellent results.

Mr. MACINTOSH said that some years ago he made an experiment in sowing plaster on peas. The young man he had in his employ sowed the plaster in one ridge and left one unsown and the consequence was that the field presented a very remarkable appearance. There was a remarkable difference between the crop which had and had not plaster.

Mr. EAGLESON sowed a barrel of plaster to two acres on clover first crop, did not sow after on peas, he thought it increased the crop 50 per cent.; did not sow on clover the second year, because he wanted the timothy to come up, and he did not think that it did much good to timothy; it was on the early pease that he used

plaster, not on the long straw pease unless sickly on potatoes he applied it after they were up, but could not see it did much good. Neither in his opinion did it do much good to oats or wheat; ashes he found very good for oats and wheat; was doubtful as to its being of service to Indian Corn.

Mr. MASON had sown 75 barrels of plaster in one year, 1 brl. to 3 acres, had sowed both in Spring and Fall; he would sow the very moment the snow was off the ground, this was the practice he had followed and which he intended to follow, as it was in his opinion the best; he had tried lime and ashes, everything, in fact, but would give the palm to plaster; he looked upon it as good for carrots and turnips.

Mr. WELLER stated that he had been brought up a farmer, but from poverty and laziness had to quit it; but latterly he had taken to farming again, and with the help of modern theory and his own experience he trusted to make his farm equal to any other in the country; he had tried plaster on his farm on an old meadow, but it had not succeeded very well; he thought that on new and light soils it would be found serviceable. He trusted, as he had again become a farmer, he would have other opportunities of addressing them.

A vote of thanks was given to Mr. Wright for his essay.

The next meeting of the Club was decided to be on the second Saturday of June at one o'clock.

The subject for discussion to be "Lime as a Manure."

#### LIME AS A MANURE.

At a meeting of the Farmers' Club of the Township of Hamilton, held at Perkins's Inn, Rice Lake, on Saturday, June 11th, 1853. Patrick Rose Wright, Esq., President, in the Chair.

Present—J. Wade, Bourn, Arnott, Fortune, Sutherland, Weller, J. C. White, W. Eagleson, Richardson, McIntosh, Ball, Henderson, Ferguson, Burnet, Ash, Capt. Thompson, &c., &c.

Mr. WRIGHT stated that the subject for discussion was *Lime as a Manure* and as there had been no one appointed to prepare an introductory paper, he should introduce the subject by a few extracts from Professor Johnston, after reading them he stated his own experience of lime in this country. He had applied lime to two fields, to one piece of about three acres of very strong clay soil: when in green crop it was very troublesome to work, he applied air slacked lime to it at the rate of eighty bushels to the acre, he applied it to the land when it was in green crop, he sowed the land with lime and he had more wheat from that piece than ever he had before from the same ground; since then it had been meadow, and instead of a ton or a ton and a-half to the acre, he had cut two and a-half tons from it every year.—On the other field, which was land that had been

very hard wrought, some that he had lately bought, he applied about forty loads of barnyard manure, and eighty bushels of lime to the acre. His crops from the land had been good, particularly the clover, it surprised himself. He thought that it would pay to apply lime even to undrained clay land; it would pay on grain but more particularly on grass. He thought lime at a York shilling a bushel was the cheapest manure we could apply, as its effect was lasting, not like plaster which was only beneficial for one or at most two years, whereas he thought lime was beneficial to the land for many years; to have his lime air slacked he bought it in the fall and kept it in a dry shed all winter.

Mr. JOHN WADE said he would state his experience with lime. Lime was one of the greatest fertilizers in Great Britain, and people thought it would do as much good here as there, but from his experience he thought that one bushel of Plaster would do as much good to the acre as ten pounds worth of lime. Some years ago there appeared a letter in the *Agricultural Journal* from Professor Johnston, stating that the cause of so much rust on our wheat was the want of lime in the soil, and that lime was an antidote of rust—but he found that it was no such thing. Some years ago he burned several kilns full of lime as he had plenty of lime stone on his farm—he applied it to his fallow land after the first ploughing at the rate of fifty bushels to the acre, and he saw no benefit from it whatever. As long as he could apply plaster to land at a cost of one third of a dollar an acre he would never think of applying lime, as he thought in our present circumstance it was throwing away time and money for no use, as one bushel of plaster would produce as much as eighty bushels of lime. A number of years ago he had limed one half of a fifteen acre field, and to this day he had seen no difference between the limed half and the unlimed. He drew his lime from the kiln and let it slack in small heaps in the field, he thought that lime might perhaps do more good in the back parts of the township than with them on the front, their land did not contain so much lime-stone rock.

Mr. J. SUTHERLAND, said I have considerable to do with lime as a building material, but have had little or no experience of it as a fertilizer. I have had convincing proof how ever on many occasions of the advantage of slacking the lime produced from quarry stone immediately on coming from the kiln—for I am well aware the same amount of good lime either as a fertilizer or for building purposes is more readily procured than by the air slacking process. With field or lake shore stone the case is different, the active property being longer retained. I have seen many instances of well burnt lime from quarry stone being rendered quite inert by lying unslacked for a few months, the only remedy in such cases being boiling water applied instead of cold, which is usual as in most cases, and even this every experienced builder knows will not produce the same amount as slacking immediately from the kiln.

These remarks of course are only applicable in certain localities where the stone used, as in Cobourg, is only in a state of formation, the Kings-



ton quarry stones for instance, retain their active properties as long as any.

Mr. BALL said he never had any experience of lime as a manure.

Mr. FERGUSON, said that he never used any lime in this country, he thought that lime would produce very little effect on undrained land; at home he had laid down lime in small heaps and covered it up with earth, then after the lime had slackened had laid it on turnips and potatoes in the drill. He thought that they used rather more bone dust and guano now in Scotland for turnips than lime; guano was a more immediate fertilizer than lime, but lime was the most lasting in its effects.

Mr. WM. EAGLESON, said he had never applied any lime in this country, though he had often seen it applied at home, they applied it both by itself and mixed with earth as a compost of about one-sixth lime, and applied this compost to their green crops, the lime they merely applied to *leas*, previous to breaking up for oats. He thought that they had more limestone in their land in the back parts of the township than in the front.

Mr. R. FERGUSON, said he had seen a great deal of lime applied in Scotland both on fallow land and potatoes and turnips in the drill, it had a highly beneficial effect on land there, and he saw no reason why it should not do as much good here. They generally laid the lime down in small heaps on the field and covered it up with soil, then when it had fallen to powder they spread it on the land, the quantity put on the acre varied with the kind of soil, if the land was light they put on less, if the soil was heavy they put on the more. He thought about thirty barrels of lime to the acre was their usual quantity [a barrel of lime was about  $2\frac{1}{2}$  bushels of our measure] if he could get lime at sixpence a bushel he would prefer it to plaster, if the land was in a proper state.

Mr. DAVIDSON said, Mr. President,—Lime and I are about entire strangers; therefore, I can say little about it as a manure. He agreed with almost everything Mr. Wade had said; that, considering the high price of lime and labor, it was almost useless to us as a manure. He thought that on old worn lands lime might possibly do good when preparing the land for wheat; but that, on our new soils, with proper management, dung and plaster would give us far better crops than lime. He thought that if we managed and wrought our land well, we could extract good crops from it without lime. His impression was that lime would not pay to apply to land.

Mr. MCINTOSH said he had no experience in the application of those costly manures here, though he had seen a vast deal of lime applied at home. Mr. Wade had said that lime did little or no good on clay soils. Now, he (Mr. McIntosh) had seen thousands of bushels of lime applied to the very strongest clay soil of the carse of Gourie. He believed they thought lime there to the land almost indispensable in the preparation for wheat. He thought that on our old worn lands lime would revive it for wheat, especially on clay soils.

Capt. THOMPSON said he was glad to have an opportunity of offering a few remarks. He would just congratulate the Farmers on their appearance here to-day. Lime and its proper application was a subject that had interested the farmer greatly for the last twenty-five years. In the West of Ireland, where he came from, it had the most beneficial effects. In reclaiming their waste land, it was indispensable. He had known lime there, drawn sixty-two miles, to apply to the land. Their method of application was just to remove the turf, and then apply the lime to the land. Their soil there was a clay—their subsoil a hard gravel. In that part of the country, he had known lands not worth one shilling an acre, and in one year, with draining and liming, converted into good farms. He had used lime here in a moderate manner; he had applied some to two fields, and he found it had a very beneficial effect—not for one year only, like plaster, but for several years. He had known lime mixed up with potato tops, earth, &c., and applied to the land—it did well for green crops. A friend of his bought a farm in Lower Canada, which was literally a farm of thistles; he mowed the thistles the first year, and mixed them up with lime and a small proportion of salt, and applied the compost to the land; now he had one of the most beautiful farms on the Island of Montreal. He thought the caustic properties of lime helped to destroy thistles on land.

Mr. ASH said that he had heard a great deal about lime and plaster, and their application. Now, he held that it was neither lime nor plaster, but proper cultivation and a good season, that secured us good crops. He believed that the very best manure for our soils was to cultivate them well. If the land was very much exhausted, he would seed it down with clover, and let it lie for a year or two. He thought that plaster was as good for clover as anything we could get.

Mr. ASH, Jr., said, as for lime, he never had any experience with it; but plaster, he was sure, had a good effect for more than one year. In a field belonging to himself and his father, the soil of which he believed to be every way the same, last year he applied plaster to his half, his father applied none to the other half; now this season his half was fully six inches higher than his father's.

It was moved by Mr. Wade, seconded by Mr. Eagleson, that the next meeting be held at Dickson's Inn, Court House, on the second Saturday of July, at 2 o'clock, and that the subject for discussion be, whether it is most profitable to general cropping to plough in the fall or the spring. Mr. James Sutherland to introduce the subject.

WALTER RIDDELL,  
Secretary.

Ground once well plowed is better than thrice poorly. But many do not think so.

Dr. Franklin says: "If every man and woman would work four hours a day at something useful, want and misery would soon vanish from the world, and the rest of the day might be leisure and pleasure."

## WELLINGTON FARMERS' CLUB.

The usual meeting of the Club was held at the British Hotel in the town of Guelph, on Friday June 10th, the President, Thomas Saunders, Esquire, in the chair. The subject for consideration was, "The best mode of cultivating Fall Wheat," which was introduced by Mr. McCrea, as follows:—

## MR. PRESIDENT AND GENTLEMEN,—

In commencing the discussion of this subject, I make no pretension of communicating anything new to those who hear me; and shall aim more at impressing on all the benefits which would result from their carrying into practical operation the most improved system of cultivation known to themselves, than is generally done. Men don't always do wrong for want of knowing the right, but often from the fact of the wrong being attended in the first instance with the least outlay or labor.

The cultivation of wheat varies in different countries, from the necessity of varying the other crops to be grown in the rotation, so as to suit the climate and market. Thus, it would be found impossible in Canada to carry out generally the four or five course shift, having one-fourth or one-fifth of the land in green crop annually, because we cannot feed any part of that crop on the ground, and the expense and labour of housing and feeding in winter is greater than the returns would warrant on so large a scale; neither does the green crop come off in time for sowing Fall Wheat, which has been, and probably will continue to be, on all favourable soils, the principal crop. Under such circumstances, it is necessary to strike out another course, which I will endeavor to explain.

Taking, then, a soil either naturally favorable, or made so, as in many instances it is capable of, by artificial means—such as under-draining, sub-soiling, and the judicious application of correctives, as lime, marle, clay, or sand, in such quantities as may be needed by the peculiarities of the soil—the next step for the enterprising cultivator, who is not above gleaning instruction from the theories of others, combined with his own experimental and practical knowledge, will be to prepare the ground for the reception of the seed; and this will naturally lead to the consideration of a proper rotation of cropping, such as will keep up a uniform breadth yearly of the various crops he wishes to grow, and yet keep his farm in a good state of cultivation.

I will assume that it is divided into as many equal parts as will suit the particular rotation required. To attain this, I would vary somewhat from the fifth course shift, and grow two

crops each of wheat, peas and oats, and four of clover and grass, with one naked fallow in eleven years. Thus:—

- |           |                   |                         |
|-----------|-------------------|-------------------------|
| 1st year— | Fallow from sod.  |                         |
| 2nd do    | —Wheat            | } manured for one year. |
| 3rd do    | —Peas             |                         |
| 4th do    | —Oats and Seeded. |                         |
| 5th do    | —Clover & Grass   | } plaster if mown.      |
| 6th do    | — do do           |                         |
| 7th do    | —Peas on Sod.     |                         |
| 8th do    | —Wheat with lime. |                         |
| 9th do    | —Oats and seeded. |                         |
| 10th do   | —Clover & Grass   | } plaster if mown.      |
| 11th do   | — do do           |                         |

At the end of this course, the land has been once manured and once limed with from 60 to 100 bushels of lime per acre, and will be in a better state than if worked on the five course shift, and manured once in the course with the spare coating, which would be available, and will amply repay the extra charge for lime, especially as it is found very difficult in this climate to make a sufficient quantity of manure for garden, orchard, and the land appropriated to roots. In the above division, it will be observed, there is no mention of roots; but this does not prevent a sufficient portion of the farm being appropriated to these very necessary crops, and they are only omitted here, because they would interfere with the rotation proposed on a purely fall wheat farm, and, as is generally the case, the orchard and one or more fields near the homestead, will be found more convenient for these purposes.—The wheat crop will thus either follow a naked fallow, or peas grown on a sod of a two years layer. In the former, I would plough once (in the spring in preference to the fall) a furrow six to eight inches deep, and use the cultivator as often as may be needed during the summer to keep down grass or weeds, running it shallow at first, so as not to disturb the grass under until the sod is in that state of decomposition considered necessary when cross ploughing is practiced, when it may be worked to the depth of five or six inches. In some soils it will be necessary to plough a seed furrow to facilitate surface drainage; but in porous sub-soils, the cultivator will do all the work after the first ploughing. In ploughing the sod for peas, such a plough should be used as will cut a furrow with a good shoulder, and pack tight, so as to cover the seed well and prevent the grass springing, that no trace of the furrow may be found after the peas are harvested. One good furrow should then be ploughed for the wheat, and the lime spread and seed sown as quickly as possible, harrowing all in together.

The best time for sowing will generally be the first half of September, the plants requiring the intermediate time before the setting in of the



winter to get sufficient root to protect them against heaving in the spring.

Too much care cannot be taken in selecting pure seed from a different soil to that on which it is to be sown, and as experience has proved that even pure seed will occasionally produce a crop with enough smut to injure the sample, care should be taken to prepare it by dressing with either vitrol or brine, I prefer the latter, made strong enough to bear an egg, the light grain and smut balls to be floated off, and the seed laying in the steep from 12 to 24 hours, according to its hardness. If the brine is at all discoloured, it should never be used for steeping a second parcel; when required for immediate sowing, a little quick lime will make it scatter. Much difference of opinion prevails as to the quantity of seed per acre, but this should be varied according to the soil and time of sowing. Could the drill be used it would effect a great saving of seed, as well as secure the crop in a great measure against risk from rust and winter-killing, preventing the former by the circulation of air between the rows, and the latter by the small intervening ridges constantly working down as well as giving an opportunity of stirring between in spring, thereby pulverising the soil, and giving it an absorbent power to attract moisture and food from the atmosphere.

In broadcast sowing, the seed should be sown directly after ploughing, so that it may drop into the angles of the furrows before they are washed down by the rain; or if sown on the level, cultivated in, all necessary surface drains opened, and well harrowed in the spring, as soon as the land is sufficiently dry. I would recommend cutting rather green, the sample being heaviest, the loss less from handling, and the yield greatest per acre, besides gaining a few days more time in harvest. I hope to see reaping machines introduced next harvest, as many of our farms are now sufficiently free from stumps and stones to permit them to be worked, their superiority over the cradle being cleaner work, less grain shelled, and a more uniform sample obtained in consequence of the whole being cut in nearly the same stage of ripeness. Another very useful implement has recently made its appearance, for gathering grain either after the machine or cradle, intended to save the binder from stooping; it is made with five or six teeth set on two wheels, intended to run under the swathe and lift up a sheaf at a time; it is said to shell less grain and do more work than the common rake. Stoking is a very particular part about harvesting; the sheaves should be small, of a uniform size, and each pair set up with a sufficient space at the bottom to allow free passage for the air up the centre of the stook, and brought together so as to be as sharp along the top as possible,

that the cap sheaves may cover all the ears. Carting is usually commenced too soon, more grain being injured in the barn than in the field, as will be seen by examining the samples at our mills, or looking over the returns of sour flour every year sold in the foreign markets.

At the close of the address, the Chairman expressed his high approval of the views put forth, which he said would do more to promote the interests of the Farmer than anything he had previously heard on the subject. Other gentlemen expressed their general concurrence in the views enunciated, and a desire that they should be carried out in practice.

Mr. Harland regretted the absence of Mr. Wright and the Paisley Block farmers, from whom he expected to hear something on the subject. Had he anticipated so small an attendance he would have prepared something in reference to the culture of wheat, which he deemed of much importance. He highly approved of the essay, and held that to be remunerative, land must be well cultivated and well drained.

Mr. Greet spoke of the importance of attending to the influence of springs in drainage, and gave his experience in reference to broad cast sowing and drilling, which was in favor of the former; but subsequent remarks showed that in his case the experiments were not carried on under equal circumstances.

Various opinions were expressed as to the comparative advantages and results of sowing immediately after ploughing and letting the land lie eight or ten days, but the conclusion arrived at was, that at different seasons and under different circumstances the one or the other might be best adopted.

Reference being again made to draining, Mr. Hes spoke of its advantages on his farm and in the neighborhood, whilst others commended it highly whenever practicable.

Mr. Harland said that in the list of premiums offered for the Provincial Show, was one from the Governor General of £20 for the best machine put in successful operation for making draining tiles, which clearly showed his opinion of the importance of the subject.

A general discussion on the best mode of harvesting and housing wheat, which elicited some useful information, terminated the discussion.

Mr. Greet moved, and Mr. Baker seconded, a vote of thanks to Mr. J. McCrea for his essay.

In returning thanks Mr. McCrea apologised for the small amount of attention he had been able to bestow upon the subject, and the very imperfect manner in which it was treated, in consequence of ill-health, from which he was still suffering. It would be observed, that he had referred to reaping and gathering machines, not because he deemed them necessarily connected

with the subject under consideration, but in consequence of their important bearing on the wheat crop with the prospective high price of labor in the Province. Neither did he anticipate that many farmers would purchase such implements, as they were too expensive, but three or four neighbours might club together for the purpose to advantage.

Mr. Smith moved, and Mr. Harland seconded, That the next subject for discussion be, Which is the best breed of Sheep adapted for this locality, and the most advantageous mode of wintering them? and that Mr. L. Parkinson be requested to introduce the subject.

Mr. Harland paid a high compliment to "the Press" of Guelph for its general devotion to the interests of Agriculture, and proposed the health of the proprietor of *The Advertiser*, which was duly acknowledged.

The meeting then adjourned till the second Friday of October next.

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## The Agriculturist.

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TORONTO, AUGUST, 1853.

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### CHEMICO-AGRICULTURAL SOCIETY OF ULSTER

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We have been favored, by Mr. KIRKWOOD, with the Report of this valuable Society for the past year. The Annual Meeting appears to have been numerous and respectably attended; in the absence of the President, the Marquis of Downshire, the chair was taken by the Lord Bishop of Down and Connor and Dromore, Vice-President, who introduced the proceedings by some sensible and seasonable remarks on the present state of agriculture in the north of Ireland. His Lordship thought that practical agriculture in Ulster was not keeping pace with arts and manufactures. In the counties of Down and Antrim in particular, he thought but little improvement had been effected in several of the most important departments of husbandry over former days. The Bishop strongly urged the desirableness of circulating the Society's *Journal* as widely as possible among the tenant farmers.

From the Report of the Council, we learn, that the Society has been in existence seven years, and made the first effort to render the application of scientific principles available to the improvement of Irish agriculture. It has

been very successful in introducing new and profitable fertilizers, and in detecting and preventing frauds therein. Much of the recent improvements effected in the culture and preparation of flax, both in Ireland and elsewhere, is fairly attributable to this Society. At the monthly meetings of the Council, a number of interesting and useful papers and reports had been read. In the Laboratory, which is under the able management of Dr. HODGES, a large number of analyses of soils, manures, and materials employed in manufactures, such as bleaching, &c., had been made; with some original investigations of an expensive and laborious nature, that had been reported to the last meeting of the British Association for the advancement of science.

The following observations of J. ANDREWS, Esq., J.P., will be read with interest on this side of the water:—

"Mr. Andrews then proceeded to state the results of some experiments that had been made in chemical manuring, citing instances in which extraordinary quantities of crops had been grown by the judicious application of certain manures. It would be of vast advantage that the fertility of the smaller portion should be extended to the larger portion; and, therefore, it was that any scientific Society which had that for its object, or which would in any way assist in attaining that important object, should be entitled to the warmest support of the public. That the Chemico-Agricultural Society of Ulster had been productive of great benefit in various districts, and had been supported very liberally, there was no doubt. But too much was expected from Societies of this kind. Mankind expected too much, in general; but, although railway speed was a great thing when attained, it was not to be attained in all instances; and the smallest acquisition of knowledge that they could acquire in that Society should, he thought, be considered worthy to be striven for. If, in the course of the whole year, they could elicit one single addition, however trifling, to the present stock of agricultural knowledge, it would be worth striving for. (Hear.) If these matters were duly considered they would be in a better position, and parties would be encouraged to support these Societies. But though they could hardly claim for themselves the honor of having exhibited very great and striking effects, they should not for a moment suppose that the Society had not been productive of very great advantage. He then referred to the experiments and analyses made in the laboratory, and said, that although for a long time they had been aware of the excellent properties of bone manure, no attempt whatever had been made to account for the mode in which it acted upon the soil in the production of the turnip crop; but now



they were fully aware of that, and not only of that, but they had found that economy in its application is to be attained; and assisted by chemical knowledge, they were also made aware that phosphoric acid applied in excess is of no more use than the necessary quantity; that the excess is lost; and that it is only the necessary quantity that is proper and economical; and it was, therefore, that he saw how useful such a Society as the Chemico-Agricultural Society would be, in ascertaining the necessary quantities of that, and of other substances. Flax was now regarded, and justly so, as a matter of the utmost importance to have it cultivated properly. When he was a boy a great quantity of flax was cultivated in his native place; but gradually it was abandoned; and, although increased quantities of flax had been grown throughout the country of late, much of it was cultivated ignorantly, but much more of it properly.—However, it would be evident that the demand for the Chemico-Agricultural Society would continue. Mr. Andrews then proceeded to instance experiments made by him with kelp, and bone manure, according to a formula supplied him by Professor Hodges, and said that he had arrived at astonishing results, and that he felt certain that by means of these manures they would be able to supply in this country a substitute for that liquid manure which was in such general use in Holland and in Belgium, and which, though it was most desirable it should, it was not probably it would ever be introduced into this country. From his own experience, he was satisfied that the experiments and analyses made in the laboratory were most important, and should be upheld; and that the empirical and absurd systems adopted formerly should be exploded. For these reasons, he thought that institutions of this kind should be most warmly supported by the public."

Professor McCosh, of Queen's College, the talented author of an able treatise on the "*Divine Government*," in proposing a resolution, mentioned the results of his observations in his native country, Scotland, and begged it to be understood that in any observations which he intended to make he should not be supposed to institute any invidious comparison with any other country, nor to mean to assert that what had been successful in Scotland would be successful in every detail in Ireland. He said:

"He said he believed that that could not be said to apply, because the two countries were different—different in the first place in the education of the people, and in the second place in the relations in which landlord and tenant stood towards each other. The people of Scotland received their education, for the most part, in the Parochial schools, and when any new thing was proposed they received it with caution. For instance, anything told them by Doctors of Agriculture—(loud laughter)—was always carefully considered before being received. He (Professor McCosh), knew a man to travel not less than 150 miles in

Scotland to see a new experiment in Agriculture. If this was successful, it would be reported to the local Association—and they were very numerous in Scotland, comprising from one to three or four parishes—then some of the influential members made the experiment again, and so the advantage of the discovery spread. As to landlord and tenant, he would say, without wishing to infringe on any debateable ground, that he was at one time of opinion there ought to be a great deal of coming and going between landlord and tenant; but experience had convinced him that the landlord should know what rent he was to get, and the tenant what rent he had to pay; and that the sooner the thing was reduced to a commercial transaction, of which the entire could be committed to paper, the better for both. Then, when the landlord would feel disposed to confer a favour, it would be a favour indeed; and, if he chose not to do so, there could be no pretence for grumbling. In Scotland, few, if any, farmers would enter on the cultivation of land without having a written agreement; and in Forfarshire, of which he could speak with some confidence, the rents latterly were raised, on the expiry of the leases, from five to ten per cent., and the farmers consented to the increased rent; and when asked why they were able to meet the increased rent, they said that they had latterly been draining their lands and improving their farms, and using a better system of tillage, and that it was owing to the increased knowledge, and to the application of science to agriculture, that they had been enabled to meet the additional burdens placed upon them. The learned Professor, after some further remarks proposed the resolution."

The Rev. Dr. MONTGOMERY made an eloquent speech, in which he attributed much of the agricultural improvement of Scotland to the peculiarities of its soil and climate, on the principle that "Necessity was the mother of invention," and to the long established parochial system of Education.

It is truly gratifying to find, as on this occasion, (would to God such occasions were frequent in Canada) the union of Clergymen of different denominations; a class of men who have it in their power to do much for agricultural and educational improvement; and as Dr. Montgomery well remarked, however they may conscientiously differ in other matters, can co-operate for the common good.

We are happy to find that Mr. KIRKWOOD attended the meeting and brought Canada before its attention. The report of proceedings alludes to this circumstance in the following terms:

"Mr. Kirkwood, Agricultural Commissioner from the Canadian Government, was then introduced by Professor Hodges, and laid some sta-

tistical returns before the meeting, showing the resources of that part of the American Continent, and its progress in commerce, arts, and agriculture. He also exhibited specimens of flax grown there, which he confidently asserted would not be excelled by that of Russia, which Canada looked forward to compete with as a flax-growing country."

We doubt not Mr. Kirkwood is producing in the United Kingdom a favorable impression of Canada, and his mission should be regarded as one of the first fruits of a Government Department of Agriculture.

#### THE LATE EARL OF DUCIE.

We promised in our last, in noticing the decease of this lamented nobleman, to give some slight account of him as an agriculturist.

The Earl of Ducie descended from an ancient family, connected by marriage with the Mortons, a family of long standing in Staffordshire. In tracing the line of his ancestry, we come to find that, independently of his individual taste and determination, there was every promise of his taking high rank as an agriculturist. "Somewhere," observes a writer in a late number of the *Farmers' Magazine*, "about the commencement of the seventeenth century the then head of the Ducie family had entered so fully into the business of the farm, and advanced so far before the spirit of the times, as to employ the celebrated Jethro Tull as his steward, and to support him in all the experiments and improvements which have made the latter's name so famous. This, however, is so well introduced, and the '*Perseverando*,' motto of the Ducie's—past and present—so well exemplified in a paper read by Mr. Hyett, of Painswick, to the Gloucester Farmers' Club, in 1842, on the benefits which agriculture has derived from Science;" after speaking of Tull's drilling and horse-hoeing husbandry, which gradually produced such salutary and important changes in the agriculture of England, the writer refers to the following quaint passage in the *Gentleman's Magazine* for 1764:—"Mr. Tull employed himself assiduously in training servants, and in accommodating the instruments proper for his new husbandry to their limited capacities: and this work he found much harder to accomplish than he at first

expected; it was less easy to drive the ploughman out of his way, than to teach the beasts of the field to perform the work. The late Lord Ducie Morton, who followed Mr. Tull, or rather accompanied him in this laborious and vexatious business, had frequently, to correct the awkwardness of his ploughmen, or overcome their obstinacy,—stript himself of his dignity, and put his hand to the plough himself; and yet with all this condescension in his Lordship, and with all the vigilance, activity, and ingenuity of Mr. Tull, who was a most excellent mechanic, they were both forced at last, after a world of money expended to very little effect, to relinquish the project, and to content themselves with farming their lands in the ordinary way, except some small portions of it, which they reserved for further experiments." The example of a nobleman lending a hand in so characteristic a way to encourage in his difficulties one of the most persevering and scientific farmers that England ever knew, was happily not lost upon his descendants.

The late Lord Ducie did not rest satisfied with making himself practically acquainted with the best systems of agriculture and stock raising, but exerted himself in carrying into practice on an extended scale the most correct principles of husbandry for the benefit of others. The district in which his Lordship resided (Gloucestershire) was more than commonly backward in agricultural improvement, and it occurred to his sagacious mind that a farm conducted on the best modern principles of good husbandry would be the most efficient means of diffusing a knowledge of, and exerting a desire for, an improved system of agriculture. Hence he commenced a number of years since the celebrated Example Farm at Whitfield, and placed it under the management of Mr. Morton, the well-known author of the best treatise in any language, on the Composition and Distribution of Soils. The main object which his Lordship had in view in undertaking the Whitfield farm was to show to visitors, and more particularly to farmers living in the immediate district, how land in a very low state of cultivation and productiveness might be profitably converted into one of very opposite character. Here was teaching by a method which the most stubborn could not well resist,—namely, that of



example. We distinctly remember several interesting particulars of a visit to this farm in the year 1845, when Mr. Morton was conducting it on his own account. The heavy crops of all kinds of grain, roots and grasses; the thriving condition of the live stock; the implements and machinery of the best kinds; the convenient arrangement of farm buildings, and the vast amount of produce annually raised from a farm of not a large extent; all tended to produce an irresistible conviction, that the whole was conceived and sustained by an enterprising and patriotic mind; such a mind as Lord Ducie was well known to possess.

The improvement of implements and live stock must be regarded as the two most important points in the advancement of agriculture; and few men have done more to promote both these objects than the late Lord Ducie. In 1841, he commenced the Uley works, which soon became celebrated for turning out some of the very best agricultural implements ever seen or used in England. The "Uley Cultivator," his Lordship's own invention, (which was figured and described in previous volume of this journal) was of itself sufficient to create a reputation.—The influence of these works by the new and superior implements and machines manufactured there, for many years, produced an effect on the agriculture of the district, and indeed of the country generally, as could scarcely be over stated.

It is not, however, by good buildings, thorough drainage, or any other liberal and judicious outlay that Lord Ducie distinguished himself as a good landlord and a good practical farmer.—Perhaps the very strongest point in his character was the judgment and spirit with which he continued to advance in the quality of his stock. A quick and well trained eye, with a determination not to allow the mere question of price to deter him from purchasing the most perfect animals, his reputation as a breeder soon became established: and his Lordship was in the habit for many years of sending some of the finest specimens of short-horns, sheep and pigs, to the Exhibitions of the Royal Agricultural Society of England, and the Smithfield Cattle Show.—"No man," observes the *Mark Lane Express*,

"ever entered with more spirit into the pursuit; while few, we believe—though not always a consequence—will be found to have collected together so many perfect animals."

We learn from the *Express* that the whole of his Lordship's splendid Herd, sheep, &c., are to be sold the latter end of the present month. The Short-Horn cattle comprise no less than sixty head of Bulls, Cows, and Heifers; several of these fine animals belong to the celebrated tribes of the "Duchess" and "Oxford" of the late Mr. Bates, of Kirklevington; also a flock of eight hundred Southdown sheep, from the stock of the Duke of Richmond, Mr. Jonas Webb, the Messrs. Ellman, and other distinguished breeders; together with an unrivalled stock of Pigs.

It may be observed in conclusion, that Earl Ducie was one of the few who originated the Royal Agricultural Society of England, of which his term of office, as President, had but just expired at his lamented death. From his first entry on public life down to the practical consummation of the Free Trade policy, his Lordship was the unwavering opponent of the Corn Laws, and his influence must have materially affected the state of that much vexed question, particularly during its earlier stages. He was also a zealous member of the Evangelical Alliance; a staunch friend of the great principles of civil and religious liberty; and as a man and a christian, his memory will be fondly cherished by all who had the honor and happiness of his acquaintance.

#### IMPROVED BREEDS OF CATTLE.

The following portion of a private letter which we recently received from that most enterprising importer and successful breeder of Durham Stock, George Vail, Esq., of Troy, N.Y., we take the liberty to publish in the words of the writer, believing that the facts which it contains will be interesting to a large number of our readers. It is encouraging to be assured that persons of Mr. Vail's high standing regard our humble labours as having aided the important cause of agricultural improvement.—EDITOR.

\* \* \* Your paper, I trust, has done great good in promoting an improved agriculture in your Province. Journals of the character of yours cannot fail greatly to improve agriculture, which is the foundation of all other business occupations.

Since my great sale in October last, I concluded not to breed Durhams on my farm for sale, as I made that announcement in my advertisement, if the cattle sold at prices satisfactory. Mr. S. P. Chapman, of Madison Co., N.Y., had previously purchased his stock from me, and desired to purchase four animals at the sale, but they went so high he did not purchase them. He is a good breeder, and on his return home I offered to import for him, or for his use, four Durham heifers from Mr. Bell, the tenant and friend of the late Mr. Bates, who had his stock from Mr. Bates. He desired me to do so, and these four heifers, in calf by some of the late Mr. Bates' bulls, are now on their passage in the ship "Mary Carson," bound to Philadelphia; and as I wanted a few nice cattle on my farm, I ordered two Devon heifers and one bull of that breed—these latter accompany the four Durhams. The Devon heifers are from the celebrated herd of Lord Leicester. Mr. Bell writes me, under date of 15th June, that there is a great demand for Short-horns in England, and that it is computed that about £12,000 sterling worth will cross the Atlantic this season for America. I mention these facts that you may, if it should be of sufficient interest to your agriculturists, glean something from them.

Very respectfully yours, &c.,  
GEO. VAIL.

#### WHEN SHOULD GRAIN BE CUT?

A most important question, just at this time, for the Northern farmer. Careful observation, and some little experience during twenty years' residence in a great wheat-growing country, has convinced the writer that it is fully ten per cent. profit on the crop to the farmer, to cut his wheat before the grain is fully ripe. Our rule is to commence cutting as soon as the earliest part of the crop has passed from the milky into the dough state. There is no occasion to let it lie to cure, when cut while the straw is still partially green. Bind it up as fast as cut, and set the bundles in stooks, "Dutch fashion,"—that is, two and two leaning together, in dozens, or twenties, or any given number, so as to give an even count. Set in this way, the most unripe grain will cure and perfect itself.

The advantages,—the grain is heavier, sweeter and whiter; there is less loss of shattered grain; the straw, where that is an object, is so much better feed as to make it worth while to cut early, even if there were a loss on the grain, which is not the case.

For seed, the best portion of the field should be set apart and left to mature until fully ripe, and then carefully cut by hand, and very carefully handled, because the very grains which should be saved for seed, are the ones most easily shattered. Give these bundles a slight thrashing, and give the grain a thorough winning; screen out all but the most plump kernels, and sow those for your next crop, and you will succeed in improving both quality and product.

This question of "when should grain be cut," has been agitated for many years, both in this country and Europe, and no doubt many a reader will exclaim, "what is the use of writing any-

"thing more than that—don't everybody know 'all about it'?" No, sir. You know, perhaps, or what is the same thing to you, you think you do, and won't learn any more, but somebody else will. You forget, or else, in your self-conceited folly, you don't think, that about ten per cent. of all the farmers who ever make any advance in the science of farming, are not to the manor born; do not possess a sort of intuitive knowledge how to do just, "as father did," and never do or think of doing anything else.

The question has been for some time agitated regarding the state of ripeness in which grain should be reaped; and it has been recommended, as a general rule of practice, to cut down the crop before the uppermost grain can be shaken out. Taking all things into consideration, it seems to be the most prudent plan to have the grain cut before it is fully ripe; but in this a medium course should be adopted; for, although grain, if allowed to become too ripe, assumes a dull, husky hue in the sample, yet, if not ripened enough, it shrivels in the drying.

Cadet de Vaux asserts that "Grain reaped eight days before the usual time, has the berries larger, fuller and finer, and better calculated to resist the attacks of the weevil. An equal quantity of the corn thus reaped, with corn reaped at maturity, gave more bread and of a better quality. The proper time for reaping, is that when the grain, on being pressed between the fingers, has a dough appearance, like a crumb of bread just hot from the oven."

Mr Howard, in the report, on Select Farms says:—"Wheat ought never to be allowed to remain uncut until it is fully ripe. Experiments, easily made, will prove to every cultivator of it, that by permitting it to stand until the straw has lost its succulence, he gains nothing in plumpness or bulk of grain, but loses much in its color and fineness of skin; besides which, he incurs the risk of shelling, by the high wind, or by its being cut under the influence of a burning sun.

"When fully ripened by standing in the shocks no dry hour should be lost in getting it well secured."

Loudon observes, that "in harvesting Wheat, the best farmers, both in England and on the continent, agree that it ought to be cut before it becomes dead ripe. When this is the case, the loss is considerable, both in the field and in the stack-yard; and the grain, according to Von Thaer, produces an inferior flour."

An experienced Pennsylvania farmer of our acquaintance always cuts his oats while the straw is green. This he learned to do, contrary to all old practices of his father and all his neighbors, by accident. His hay crop was short one year, and he determined to cut his oats green; that is, five or six days too soon, as he thought, losing the grain for the sake of the straw. For seed he left a strip through the middle of the field, where the oats were best. The grain of those cut was just in the dough and milling state, and he expected they would all shrivel up. What was his surprise when he came to thrash to find the early cut straw yielding as much and as plump grain as that which stood till it was dead ripe, while the straw was incomparably better—in fact, the stock ate it as rapidly as they would timothy hay.



CLOVER AS A PREPARATION FOR WHEAT, &c.

*To the Editor of the Agriculturist.*

Oakland Farm, Warwick, June 25, 1853.

SIR,—I am sorry none of your readers have taken the trouble to give your London subscriber the information he desires in the *Agriculturist* of April, although I am convinced a very great number of them could do so if they chose. I shall endeavor to give him my plan, which I have practiced for thirty years in Canada, and I saw the same course followed by the best farmers in East Lothian, and by the Tweed side and Teviotdale farmers. As I leased land both from the Marquis of Tweeddale and in Roxburghshire, for twenty years before. I have never given but two acres a naked fallow in Canada. I sow my fall wheat always on clover sod, and my crops have advanced from ten bushels per acre on new land after Peas, without manure of any kind other than a few leached ashes, to twenty-two bushels the first time on clover sod, and I anticipate an increase of from six to eight bushels every time its turn arrives in the rotation, for years to come. The course I have adopted with success, is the following, viz:—

First year potatoes, second barley seeded down with clover alone, and sown in the chaff, a two bushel bag to the acre; third, clover, cut the first crop about the 18th June, second crop seed; fourth, clover, cut the first about the 22nd June, plough down the second crop about the middle of August. Roll and sow wheat about the first of September; manure. Before sowing potatoes and wheat, I wash them in stale chamber ley and dry with lime, sow immediately. I never have one ball of smut. My land is generally Oak clay and requires two yoke of heavy cattle to plough it the first time, and I have never found much difficulty in ploughing down clover sod for my wheat in the dryest season, with an ordinary team. I never sow timothy among clover when I intend to sow wheat; when I plough it down, as several experiments that I have tried have proved to my satisfaction that it does injury to the wheat; but when I sow timothy, it is in the other five years rotation I adopt, when I find it of immense value in increasing the weight of the hay crop; which is corn, oats, clover and timothy, peas, wheat and begin with potatoes again in the other. It will be seen I have a crop of wheat once in five years, while I have a crop of the others only once in ten years on the same land, while the land is properly cleaned and pulverized every fifth year, as well as being manured twice in five years. But I give the corn and peas a deal more dung than the potatoes and wheat; since the rot began, potatoes cannot suffer so much, and who does not know that over rank wheat never matures a plump berry?

Before I conclude, I beg leave to say a few words to Mr. *Tenant Farmer*. I am astonished he has never seen any difference in sowing clover with different kinds of grain. I have sown it with barley, potatoes, oats, and spring wheat, on land that was with potatoes the year before. I mowed a good crop of grass after the barley was harvest-

ed, that after the oats showed a good deal of blossom, while that after the wheat appeared doubtful whether it would be a crop at all.

When it is intended to make the second crop of clover, seed immediately after it is cut, no matter whether the weather is wet or dry, in order to start the seed crop, it is of great benefit to empty the liquid manure tanks on the stable; its effects are surprising, indeed I think it is perhaps the only way it can be used to show its real advantage that I have had an opportunity of seeing it applied.

I have written these few remarks from experience, with the desire to benefit those who may wish to avail themselves of adopting the same.

T. S

[We shall be happy to hear again from our correspondent on such matters as have come within the range of his extended observation and experience.—*Editor*.]

THRASHING AND PREPARING CLOVER FOR SEED.

*To the Editor of the Canadian Agriculturist.*

DEAR SIR,—Having in a former communication made some remarks on the growth of Clover for seed, I now proceed to the cutting and securing of the crop, and to the preparation of the seed for market. If the first crop of Clover was cut in proper season, the second will generally ripen about, or soon after, the 20th of September; mine is generally ripe by the time I have got fairly done with sowing fall wheat. I believe that in some parts of the country they have machines for cutting and gathering the heads of clover in the field, but never having seen any of them, I can only state the method I have pursued.

As soon as the seed is ripe (which is easily ascertained by rubbing out a few heads), it is best to mow it as soon as possible, both to prevent waste in the seed, and there is a better chance for good weather the earlier it is cut. Where one has not barn room and is obliged to stack it out, it is desirable to cut it all as soon as possible, so that the clover may all be ready for the stack at once; but where there is room in the barn, it can be cut and drawn in as most convenient.

Should the crop prove a heavy one, it is often badly laid down, which makes it hard to mow and dry, and when thus laid the seed is seldom so plump and bright a colour as when the crop stands up. When the crop is light and ripe it can be secured in a few days, but when the crop is heavy and the weather bad, it is a rather tedious job to secure clover seed in proper condition. When the weather is favourable, I actually turn the clover over in the swarth to dry properly, and then gather out of the swarth with pitchforks on to the waggon, raking the ground over afterwards with a horse rake. If the crop is very short and light, it has to be raked by hand, as it is impossible in that case to gather it clean with a horse rake. The Clover ought to be as dry as possible before it is gathered, as when well dried it greatly facilitates the thrashing and cleaning afterwards.

Clover should be tossed about as little as possible, as there is a great waste in such a practice,

especially should it have got rain after cutting. It is best to avoid putting it up in cocks, as it takes in wet in the cock very fast, and will not dry without shaking out, which causes a great waste of seed from shelling.

To prevent all danger from heating in the stack or mow, which clover is very apt to do, it is best to fix the bottom of the stack or mow so that the air can circulate beneath, and then draw one or more empty barrels up the middle of the stack or mow as it is built up, thus leaving an air-hole to draw off any heat that may generate, and so effectually prevent any heating,—as a very little heat will damage the seed. When it is stacked out it should be thatched as soon as the stack is put up, as the stack takes in rain as fast as a pea-stack would.

Clover seed can be thrashed and cleaned immediately on being taken from the field, if desired, but it is seldom cleaned before winter, as there is then most time to attend to that important process, and it is far more easily cleaned in frosty weather. The seed can be separated from the straw either with the flail or a thrashing machine, or trodden off by horses, as is most convenient; if it is thrashed by one of the large eight horse power cleaner thrashing machines it is best to fix some boards between where the chaff blows out and where the straw comes over, as most of the clover hulls blow out from the fanning mill of the thrashing machine. Care ought to be taken to shake the clover straw as clean as possible, as it is as bad to shake clean as to thrash clean.

After the clover has been thrashed off the straw and before it is put through a clover huller, it is necessary to riddle it through a coarse riddle; where there is only a small quantity to clean, a round hand riddle with meshes about three-quarters of an inch square will answer; but where there are large quantities to clean it is better to use a large riddle, say four or five feet long, and from two to two-and-a-half feet wide, made with short handles at one end, and to swing with a rope from a beam at the other, the person using it standing at the end opposite the rope, (with a stool to rest the end of the riddle on when he fills it,) and swinging it backwards and forwards till the hulls fall through, leaving the short straws in the riddle to be thrown to one side. The meshes of the riddle should be about three-quarters of an inch square. With a proper riddle fixed in this manner, a large quantity can be riddled in a day; care being taken to hang it at a proper height for the person using it, so that he may work it with ease and freedom.

After all the straws that can be got easily are riddled out the clover is ready to go through the huller, or clover stripper, as it is sometimes called; or where a clover huller cannot be got it may be cleaned by a spiked thrashing machine, set as it will run; but in this case it will have to be put through several times, which requires more time and labor than a huller, and there is likewise more seed wasted; or it may even be thrashed out with the flail if the weather is frosty—but the flail is both a tedious and laborious way.

The quantity that can be cleaned in a day will depend both on the condition and quality of the

seed, and on the kind and capabilities of the machine; it has varied, according to my observations, from four to fourteen bushels in a day,—as when the seed is dry and the weather frosty, a great deal more can be cleaned than when the seed is damp or the weather fresh. After being blown through the fanning mill, the seed will require to be sifted through a sieve of about eight meshes to the inch; then again run through the fanning mill to blow out all the light seeds, dust, &c., when it is fit for market.

Where seed is only grown for one's own use all that is required is to thrash it off the straw, as it will grow just as well sown in the chaff as when it is cleaned.

It is sometimes objected to the growing of clover for seed, that it is a severe crop on land, and impoverishes it so much that it is unfit for growing any other crop. I have grown small quantities for the last twelve years, and paid particular attention to this very important point, and I could never observe any difference in the succeeding crops from that part of the field where the clover was grown for seed, and the other parts of the field that were cut only once for hay. One advantage attending the growth of clover for seed, which ought not to be overlooked, is, that it is a severe check on that great pest to the farmer, the *Canada Thistle*, as at the first cutting of the clover the thistle is just getting into blossom, and any that starts again are cut off at the second cutting; thus effectually preventing any of the thistles going to seed for that season. Good clover seed will weigh from 60 to 64 lbs. per bushel, and is said to afford 2600 grains to the dram weight.

A TENANT FARMER.

Township of Hamilton,  
July, 1853

#### CLASSIFICATION OF MANURES.

The following classification is taken from Stockhardt's Field Lectures. The best manures are given first.

##### I. MANURES RICH IN NITROGEN.

1. *Substances containing ammonia*, (very forcing.) Ammonical salts of all sorts, good guano, urates, root, putrid animal substances, such as blood, flesh, skins, &c.; poudrette, gas-water, putrid urine, draining-compost, fermented stable manure, especially of sheep and horses.

2. *Azotized substances that are easily decomposed*, (somewhat quickly forcing.)—Horn-shavings, glue, boiled-flesh, bones liquified by acid, steamed and finely pulverized, oil-cakes of all sorts, malt-grain and the refuse of beer-breweries, fresh urine, drainings, stable-manure beginning to rot.

3. *Azotized substances that are decomposed with difficulty*, (slowly forcing.) Bonedust coarsely powdered, woollen-rags, fresh stable manure.

4. *Substances containing nitric-acid*, (quickly forcing.) Nitrate of potash, [ordinary saltpetre,] nitrate of soda or Chili saltpetre, nitrate of lime or decayed stable-walls, rubbish of old clay walls, and old compost earth.



**II. MANURES RICH IN CARBON :** [forming humus.]

Stable-litter, straw, foliage, weeds, forest-leaves, saw-dust, lawn and garden trimmings, rotten mould, turf, earthy brown-coal, and vegetable substances of nearly all sorts.

**III. MANURES CONTAINING POTASH :** [strongly forcing.]

Potash, nitrate of potash, malt-grain from beer-breweries, urine of breeding cattle, wood ashes, foliage, stalks and leaves of all sorts, lawn and garden trimmings, building rubbish, street-sweepings, compost, burnt clay and loam, marl of many sorts.

**IV. MANURES CONTAINING SODA :** [less visibly operative.]

Common salt, refuse salt, Chili saltpetre, soap-boilers' lye, urine, certain sorts of manuring salts, soda felspar, and some other kinds of stone, soap-suds, dish-water.

**V. MANURES RICH IN PHOSPHORIC ACID :** [seed-forming.]

Burnt bones, bone black, sugar refuse from refineries, phosphorite, and a few other kinds of stone, poor guano, raw bones, bone dust, true guano, animal substances of all kinds, oil-cake, malt-grain from breweries, solid human and animal excrements, stable-manures, urine of carnivorous animals, wood ashes, straw, leaves, &c.

**VI. MANURES CONTAINING SULPHURIC ACID :** [partly direct manures, partly absorbent of manuring substances.]

Gypsum, sulphuric acid, green vitriol, sulphur-coal, ashes of pit-coal, turf, and brown coal.

**VII. MANURES RICH IN LIME.**

Burnt lime, chalk, marl, gypsum, ashes of brown-coal and turf, building rubbish, pond mud, and soap-boilers' ashes.

**VIII. MANURES RICH IN SILICA.**

Pit-coal ashes, as also ashes of all sorts, sand, straw, stable-manure, &c.

**IX. MANURES THAT PULVERIZE THE SOIL.**

Sulphuric acid, muriatic acid, lime, marl, humus, &c.

**X. MANURES THAT IMPROVE THE SOIL.**

Lime, marl, loam, sand, pond-mud, vegetable mould, turf, &c.

Here is a fine classification of the chief manures that are employed as fertilizers.—They should be chosen and applied according to the nature and condition of the soil, as well as with reference to the crop, that is to be produced. Many of the manures are compounds—hence the reason why you find them repeated in the different classes. The farmer should preserve this classification and use it until he finds a better one.—

Subsoiling sound land, that is, land that is not wet, is eminently conducive to increased production.

**TRAINING HORSES FOR THE SADDLE.**

The following passages are taken from that excellent English periodical, the *Veterinarian*, and will be found well worth a careful perusal.

We have always been of opinion that horses were used under great disadvantages, irksomely to themselves, besides awkwardly and annoying to their riders and drivers, who had not been educated, or, as it is called, "broke in," for the purpose for which they were intended. Compared with the number who receive no "breaking" at all—or none, save what little they get, to quiet them to domesticity, from the hands of the country "colt breaker," how few are they who have once had a schoolmaster's whip over their heads. And yet, mount an animal of this numberless class, and afterwards throw the leg over a really broke or managed horse, and the difference is likely to prove as great as—speaking not so very wildly—between riding a horse and riding a cow. True it is, with persons who do not from experience understand this, riding is riding so long as it is on horseback; but a true and expert horseman would as soon ride a donkey as an awkward, no-mouthed, no-paced horse.

On all occasions it is a consideration of moment to avoid alarming a horse; and although this applies to every hour of his life, it is of greater consequence with young than with aged horses; that is to say, young ones will be alarmed at trifling objects, which at a future age they would not notice.

The control which we acquire over the horse depends upon the mouth, and likewise a vast proportion of the agreeable or disagreeable associations which render exercise on horseback pleasant or toilsome. A good mouth is the medium by which any improvement in the natural carriage of an animal is to be accomplished. When going at a slow pace, the way in which a horse carries himself may, to a very considerable extent, be controlled; but when at speed, or even when nearly approximating that pace, his unrestrained action must prevail. By habit in the slow paces, improvement in the faster ones may be slightly obtained; but that must be brought about by very moderate attempts, otherwise the action of the animal, far from being corrected, will inevitably be rendered worse. A horse that bends himself nicely, is undoubtedly more pleasant to ride than one which runs with his nose down to his knees; or the reverse, with his head in rivalry with that of his rider; and such defects are, in most cases, capable of correction if properly treated in juvenile days; but too much constraint is adverse to pace both for racing and hunting. When a horse carries his head too high, it may, in many instances, be remedied by using a curb bit without any port, but with rather long checks, and the curb chain hung quite loose. Accompanied with good hands, this often produces an excellent effect, especially with young horses, which are disposed to contend against the control of a martingale. It may appear as a contradiction, but when a horse carries his head too low, a curb bridle will often be found the best remedy; and the contradiction is cleared up by the remark, that the difference of effect is pro-

duced. For the latter purpose, a short-checked bit, when judiciously used, will with many subjects be found effectual; and, in order to render it so, the hands must be raised higher than usual at the precise instant when the animal endeavours to drop his head; by this means the curb is brought into action, but should be again released when a proper position of the head is obtained. This should be particularly attended to, for such horses are very apt to hang on the bit—an imperfection likely to increase with age if not counteracted. Although I so far advocate the use of double rein or curb bridles for certain purposes, let me not be misunderstood as recommending them for general use; quite the reverse. A horse with a good mouth, carrying his head in the true position, never goes so freely and pleasantly to himself, as with a snaffle bridle; but it is to teach the horse how to carry himself, that the curb is in many cases of great utility.

A really good hack is a difficult creature to procure. Not that there is a great scarcity of the 'raw material,' but, unfortunately, it is only the raw material that can, in many instances, be obtained; this arises principally from want of care in breaking. It is presumptuous for people to suppose, and subjects them to ridicule when they assert, that they can complete the education of a colt as well in three weeks as in three years; but there may be some few who do not appreciate a nicely trained hack, and it is a great pity when such an animal happens to get into their possession. Those who have the means only purchase such horses, as are thoroughly educated, or they employ men of experience to break, and cultivate the accomplishments of the horse which they either breed or buy. Of course they only select those of goodly appearance, with superior action; and no one need despair of making them agreeable to ride, if they will unite patience with discretion. Such animals will always realize a good price; but it requires time to render them perfect. To suppose that a horse can be educated, so as to carry his rider with comfort and pleasure, in three weeks, or even three months, is ridiculous.

#### TRAINING STEERS.

The following mode of transforming the wild and unmanageable steer, into the gentle and well trained ox, is both reasonable and instructive. We extract from the *Country Gentleman*:

The first point is to make them tame and gentle. This may be accomplished by feeding them out of the hand, and carding them daily. They should be approached gently, without yelling at them until they are frightened out of their wits. After having reduced them to a state of perfect docility, a good yoke should be procured, suitable to their size and strength. A small pen is necessary to put on the yoke; approach gently with the yoke, patting and speaking gently to them until you have the yoke on the off steer; then let an assistant drive the other under the yoke. Their tails should then be securely fastened, to prevent their getting the habit of turning the yoke. They should be yoked in the morning, and unyoked at night—in this manner, for several days, until they become accustomed to the yoke.

The first thing to teach them is, to stop at the word of command. This may be done by striking them across the face; the blows should be repeated until they stop, and then discontinued; by striking them for every non-observance of the word of command, they will soon learn that by stopping they will avoid it, and will act accordingly. They may be taught then to "gee" and "haw," by gently pushing them around. Backing may be taught by beginning with an empty cart on a side-hill; then on a level; then with an increasing load until they will back nearly the same load they will draw. They should never be put to a load that they cannot readily draw, or drilled by prolonged exercise beyond the period when it becomes irksome. Loud and repeated yelling, or the use of the lash, is both cruel and useless. Clear and intelligible, yet low and gentle words, are all that is necessary to guide a well trained ox. The ox understands a moderate tone more perfectly than a boisterous one, as all sounds become indistinct as they increase. A command should never be given unless enforced. Many bear with bad tricks for a long time, without even an expression intelligible to them; but when patience departs, a thorough storm of blows is poured upon them. This is the way to ruin every beast; a single blow should be given for each offence.

#### SCIENCE AND AGRICULTURE.

Look at that wide valley, with its snow-clad summits at a distance on either hand, and its glassy river flowing cribbed and confined, in the lowest bottom. Smiling fields and well-trimmed hedge-rows, and sheltering plantations and comfortable dwellings, and a busy population, and abundant cattle, cover its undulating slopes. For miles industrious plenty spreads over a country which the river formerly usurped, and the lake covered, and the rush tufted over, and bog and mossy heath and perennial fogs and drizzling rains rendered inhospitable and chill. But mechanics have chained the river, and drained the lakes, and bogs, and thus giving scope to the application of all the varied practical rules to which science has led, the natural climate has been subdued, disease extirpated, and rich and fertile and happy homes scattered over the ancient waste.

Turn to another country, and a river flows deeply through an arid and desolate plain. Mechanics lift its waters from their depths, and from a thousand artificial channels direct them over the parched surface. It is as if an enchanter's wand had been stretched over it—the green herbage and the waving corn, accompanied by all the industries of rural life, spring up as they advance. Another country, and a green oasis presents itself, busy with life, in the midst of a desert and sandy plain. Do natural springs here gush up, as in the ancient oasis of the Libyan wilderness? It is another of the triumphs of human industry, guided by human thought. Geology, and her sister sciences, are here the pioneers of life and fixed habitations. The seat of hidden waters at vast depths was discovered by her. Under her directions mechanics have bored to their sources,



and their gushing abundance now spreads fertility around. Such are the more sensible and larger triumphs of progressing rural economy—such as man may well boast of—not only in themselves, but in their consequences; and they may take their place with the gigantic vessels of war, as magnificent results of intellectual effort.—*New England Farmer.*

### THE FARMER'S PROSPECTS.

*To the Editor of the Canadian Agriculturist.*

Sir:—As your valuable journal is the only one in Upper Canada, which the farmer can exclusively call his own; the only one entirely devoted to the interests of the farming community, and consequently the only one in which farmers can communicate their ideas to one another, without being sneered at,—can suggest anything that they think would be for the public good, without drawing down upon themselves a torrent of abuse, such as we see daily polluting the pages of many of our leading political papers,—can ask any information they require, from those who have had more experience, or whose more liberal education enables them to do so, and whilst these more experienced and better educated farmers impart that information to others, they not only improve themselves, but confer a lasting benefit on mankind.

It has been well said by a certain philosopher, that “he who makes two blades of grass grow where only one grew before,” is a benefactor to his country, and surely our hardy sons of toil, who have made Canada what it is, have been benefactors to their country in the truest sense of the word; men who boldly plunged into the wilds of the forest, with their axe on their shoulders, had to cut their way for miles, over rivers and swamps, to the place of their future residence, and then see the hardy settler as he makes his temporary hut, to shelter him at night while he clears off the trees—and raise his log shanty, which to him is his castle, for the time being,—by and bye you see it give place to a larger and a more commodious one, perhaps to meet the demand of his rising family, this, in its turn, gives way to the beautiful brick or stone dwelling-house. When the industrious farmer has now gathered around him all the necessaries, and a great many luxuries of civilized life—see his capacious barns full of grain—see his well arranged sheds, and farmyard well filled with stock of the choicest breeds. See his well laid out farm—perhaps dotted with a few blackened stumps, but nevertheless, contrasting strongly with the dense and tangled forest, that waved triumphantly there a few years before—see his substantial fences, straight and good; well staked and ridged, the very look of which is enough to deter the most audacious ox; see his gates, swinging freely on their hinges, not dragging on the ground, none of your sliding bars—that a man must lay down and put up, every time he passes through with a team, by which he will, in the course of one year, lose more time, than two gates would be worth, and then see his nice kitchen garden, under the fostering care of some of the female members of the

family, prolific with wholesome vegetables—and his beautiful orchard, stocked with the choicest fruit trees.

I say Sir, if such men as I have been describing—and I am proud to say that we have many such in Canada—are not the best benefactors our or any other country can produce, then my reasoning is false, my logic is unsound; but, I leave it to your candid readers to draw their own conclusions. Lift up your heads ye pioneers of the forest, ye sturdy yeomanry of Canada, whose sinewy arms, made strong by toil, have made you what you are, a free, happy, and independent people; you have nobly done your duty, you can now sit down and enjoy the fruits of your labour, and although your hands may be hard and stiffened by toil, and your once active limbs may have lost their agility, and your athletic frame and robust constitution may have been impaired by privation and hardship, and your honest countenance once full of expression, now furrowed by the plough of Time—and your raven locks that once hung so gracefully on your shoulders, now bleached with the frosts of 60 or 70 winters; still your heart is as kind, and your affections and sympathies as warm as ever. No unfortunate wanderer imploring assistance is sent empty away. No houseless stranger is refused the shelter of your roof, your hospitality extends to all.

Happy, happy farmer! how the great ones of the earth might envy your lot! But, Sir, I have forgotten the subject on which I at first intended to write, viz., “Live Fences,” a subject which must soon become of vital importance to the country; with your permission I will take it up at some future period, till then believe me,

Yours truly,  
HIBERNICUS.

Toronto, July 1853.

### FARMING.

If one half the zeal, energy and expense that blots so many gazettes with low and coarse abuse, setting the whole community by the ears for the vain and paltry purpose of a few demagogues and office seekers, were bestowed on the advancement of agriculture. If the people were half so ambitious to improve and beautify their fields, as they are to settle the affairs of the nation; and half so angry with thistles, thorns and poor fences, as they are with their political opponents, who probably wish as well to the country as they, we should have more productive fields, less complaints of poverty, more ability to be charitable and munificent, and abundantly more good feelings. From Pittsburgh to New Orleans the son plows as his father did before him, and the great mass of farmers are as stationary in theory as they are in practice. Nine in ten believe at this moment, that book farming is the mere, useless, visionary dreaming of men that know nothing about practical agriculture.

We would tell them that England is the garden of Europe simply because almost every acre of the ground is cultivated scientifically, and on principles which have been brought to the test of the most rigid and exact experiment. We would tell them that New England, of whose soil and

climate they are accustomed to think, as consigned by Providence, to sterility and inclemency, is the garden of the United States, only because the industrious and calculating people do not throw away their efforts in the exertion of mere brute strength—but bring mind, pain, system and experience to bear upon their naturally hard and thankless soil.

On every side the passing traveller sees verdure, grass and orchards in the small and frequent enclosures of imperishable rock, and remarks fertility won from the opposition of the elements and nature. After an absence of ten years, on our return to our country, we were struck with this proud and noble triumph conspicuous over the whole region.

The real benefactors of mankind, as St. Pierre so beautifully said, are those, who cause two blades of wheat to mature where one did before. The fields ought to be the morning and evening theme of Americans that love their country. To fertilize and improve his farm, ought to be the prime temporal object of the owner of the substantial soil. All national aggrandizement, power and wealth may be traced to agriculture, as its ultimate source. Commerce and manufactures are only subordinate results of this mainspring.

We consider agriculture as very subsidiary not only to abundance, industry, comfort and health, but to good morals and ultimately even to religion. We shall always say and sing, "Speed the plow." We shall always regard the American farmer, stripped to his employment, and tilling his grounds as belonging to the first order of noble men among us. We shall always wish them bountiful harvests, good beer, and moderate use of cider; and if he will rear it himself, of the grape, but none of the pernicious gladness of whiskey; and we shall only invoke upon his labors the blessing of God, and say of him peace be within his walls.—*Rev. T. Flint.*

#### THE HORSE—WANT OF APPETITE.

This sometimes arises from over exertion, or immoderate work, which produces general debility, and of course the whole functions are more or less disturbed, and take on the morbid action. At other times, it is brought on by overloading the stomach and bowels; by standing in the stable without exercise, and eating immoderately of hay. Want of appetite may depend on a natural delicacy of the stomach, or on the bad quality of the food.

Bad hay is often eaten with little or no appetite, especially when it has been musty.

When the appetite fails, though the food is good and the horse has only moderate work, the diet should be changed; a small quantity of straw cut up with what is called cut food would be serviceable; but if the horse has been worked hard, rest, probably, is the remedy necessary. Young horses sometimes refuse the hay, or mangle it, from soreness in the mouth in consequence of changing their teeth. This is sometimes attributed to lampas, and the knife or firing iron is resorted to; this is a cruel and barbarous practice,

and should never be permitted. When a young horse is changing his teeth, the whole mouth is red and tender, which makes him fearful of eating hay or unground corn, from the pain it gives him. In such cases, the horse should be kept on scalded shorts or cut feed, until the soreness of the mouth is removed. In old horses when the lampas are down to a level with the front nippers, the part should be washed with a strong solution of burnt alum; or make a solution of powerful bloodroot, and wash the part night and morning.

All serious internal disorders are attended with loss of appetite. Weakness of appetite is often constitutional, and cannot be cured yet it may be palliated; when such a horse is wanted only for moderate work, his appetite may be greatly improved by careful feeding and grooming, and a well ventilated stable. The food must be of the best quality and the water pure and not too cold or hard; he should have but little food at a time, but more frequently. He should never have more but rather less food put before him at a time than he is inclined to eat; and if at any time he is found to leave food in the manger, it should be taken out, and, after keeping him without food for a short time, some fresh hay, oats, or shorts may be given. The rack, manger and every part of the stall should be kept clean; and when taken out for exercise or work should be well swept out, the old litter spread out to dry, and that part unfit for use taken away. At night some clean fresh straw should be placed under him. A change of food is often useful, especially when green food or carrots can be obtained. It is the custom in many stables to collect the bedding, after it has been saturated with the excrement and urine, and place it under the manger, thus submitting the horse to the noxious vapors that arise from the filthy mass. Is it to be wondered at, that the poor animal should drag out such a miserable existence?

#### LAYING OUT SURFACES.

A few simple rules are oftentimes convenient to those who are not conversant with surveying operations; and a writer in the Western Horticultural Review has communicated to that work some very good ones, some of which we copy, and to which we add a few others.

*To lay out an acre in a circle.*—First fix a centre, and with a rope as a radius, seven rods, three links and three-eighths long, one end attached to the centre, and kept uniformly stretched, the sweep of it at the other end will lay out the acre.

For one quarter of an acre, a rope three rods and fourteen links will be the right length.

For one-eighth of an acre, a rope two rods and thirteen links will be enough.

*Triangles.*—If you wish a triangle to contain just an acre, make each side nineteen rods, five and a half links long.

A triangle whose sides are six rods and twenty links long each, will contain one-eighth of an acre.

*To lay out an ellipse or oval.*—Set three stakes in a triangular position. Around these stretch a rope. Take away the stake at the apex



of the triangle, which will be where the side of the oval is to come; move the stake along against the rope, keeping it tight, and it will trace out the oval.

A square, to contain an acre, or just one hundred and sixty rods, should have each of its sides just twelve rods, ten feet and seven-tenths long.

*To draw an oval of a given size.*—The long and the short diameters being given—say twenty feet for the shorter, and one hundred for the longer—divide the short diameter into any number of equal parts, say ten, and from each point draw a line parallel to the long diameter; then divide the long diameter into the same number of equal parts, (ten) and from each point draw a line parallel to the short diameter. Then draw a line from point to point where each corresponding line cuts the other, on the outside, and this connecting mark will describe the oval or ellipse required.—*Maine Farmer.*

## HORTICULTURE.

### IMPROVING OLD PEAR TREES.

It is quite common, on looking about a farm house in any long settled part of the older States, to see more or less old pear trees in the vicinity of the buildings. The natural or wilding pear stock, when once acclimated to the soil, is remarkably hardy—few trees of any kind more so—and if left unscathed by the blight, it may stand flourishing and fruitful for centuries. Such trees, however, seldom yield fruit of much value, being deficient in flavor, choky, and astringent.

*A Remedy.*—Supplanting this valueless fruit with the choicest, can at once be applied, but a stern prejudice seems to have governed those who own such trees in the belief that “grafting old trees” will not succeed.

Last August, spending a day at Whitesboro', in the county of Oneida, in this State, we took a ride to the beautiful picturesque hill at the south of the village, to the agreeable residence and farm of Captain Henry White, a grandson of the late venerable Hugh White, the first settler of that town, and whose domain is a part of the original possessions of that hardy veteran. Walking with us in the orchard near the house which overlooked the broad and luxuriant valleys of the Sauquoit and the Mohawk, with several thriving villages, and the city of Utica in full view, Capt. White pointed out a venerable pear tree, standing by itself, which was planted three years previous to the present century, and now probably sixty or seventy years old—a seedling, which, ever since his remembrance until lately, bore large crops of worthless fruit. Five or six years since, he headed it thoroughly in, and grafted it with Virgalieu (white Doyenne) pears. The shoots grew vigorously, and were then hanging full of the finest fruit; fair, healthy, and free from either spot or crack, to which this variety of the pear has of late years been so much afflicted. The main trunk was also vigorous, and to all appearance it may stand a full century longer, and favor its proprietors with annual crops, if proper care be taken of it.

Another instance. A few weeks ago, paying a visit to a friend on the Canada side of the Niagara river, a region renowned far for its fine apple orchards, he pointed out to us in his orchard, a large pear tree upwards of two feet in diameter at the base, which had been planted there at least sixty years before. It was healthy and flourishing. A few years previous, its owner being at our own residence, had taken some cuttings of the Maria Louisa, Winter Nellis, Virgalieu, and Glout Morceau pears, home with him, and headed back a part of that tree, in the limbs of which he inserted the grafts. What was our surprise on being shown in the high top of this tree, vigorous branches bending under the weight of such specimens of all these varieties as we had scarcely before seen—large, fair, and perfect—better indeed than on any young trees of our own!

We can offer no better service to our readers than to earnestly invite them, in the proper season, at once to head in every pear tree which bears indifferent fruit, let it be ever so old, and fill the branches with choice varieties. No matter how old the tree, if still alive. Generous treatment, with lime, potash, crushed bones, and chip manure—saw dust or spent tan bark will do, if the chip-dung be not at hand—and all well dug in; the tree will then renew its age, and give even to the next generation abundant crops of fruit. There is hardly a tree in existence which has greater vitality than the pear, and certainly none which better pays for cultivation. We have known forty bushels taken from a single tree the past season, and twenty to thirty is a common crop on full-sized trees.—*The Agricultor.*

### INSECTS AND PEAR BLIGHT.

Professor Turner, of Illinois, thinks he has discovered the cause of the western pear and apple blight. He finds little white specks on all parts of the tree—as every one has observed—but some of these are larger than the rest, appearing like a “mite of mould” on the bark. This he finds, by the use of the microscope, to contain “infinitesimal” eggs in vast numbers, which subsequently hatch into microscopic insects. They appear to exude a poison, which destroys the bark beneath, leaving small holes like the prick of an awl, and are in short the cause of blight, that is, in other words, death. As many close observers, with powerful microscopes, have never discovered these punctures in diseased trees, we may fairly infer that if these insects cause the death of Professor Turner's trees, they do not of most other people's. He has tried ineffectually to destroy them with “soap, ley, ashes, lime, copperas, sulphur, plaster, tobacco, spirits turpentine, salt, coal-tar, charcoal, asafetida, and a whole apothecary shop of other drugs.” He calls for the observations and experiments of others. He proposes for this insect the elegant name of “pear devil.”—*Albany Cultivator.*

### HOW TO ENLARGE VEGETABLES.

A vast increase of food may be obtained by managing judiciously and systematically—caring out for a time the principles of increase.—Take, for instance, a pea. Plant it in very rich

ground; allow it to bear the first year, say half a dozen pods only; save the largest, the following year, and retain of the produce three pods only; sow the largest the following year, and retain one pod; again select the largest, and the next year the sort will by this time have trebled its size and weight. Ever afterwards sow the largest seed, and by these means you will get peas or anything else, of a bulk of which we at present have no conception.

#### WINTERING TEA ROSES.

The following mode is reported by the editor of the Horticulturist, as having been entirely successful the past severe winter. One foot of tan bark, applied to the oval bed late in autumn, nearly cover all the stems, the tallest being bent down. This tan bark was kept perfectly dry by means of three bundles of straw, formed into a circular radiating thatch, gathered to a point at the centre—forming what a farmer would call a cap. Keeping the tan dry is the great requisite.

#### THE PLANT FLY TRAP.

We have read of the vegetable snake of Africa, and the water-spider flower of Persia; we have seen a pea grow up with wings, which might easily be taken for those of a dragon-fly, but one of the most ingenious fly traps in the world is a plant which grows in our shaking deep marshes; it has a small fibrous root, and no leaves; the stalk is about three-sixteenths of an inch in diameter, is one foot high, and is surmounted with a flower; it is furnished with a bag of a peculiar form, and something like a purse at the throat. The mouth is lined with hairs, which are the watchers for prey, and the sentinels to the vegetable nerves of the plant; they are very numerous and powerful, and act at once on the throat of the bag, which has a thick cartilage, like an India rubber band. No sooner does a fly enter this bag, than, like the sensitive plant, it contracts, closes upon the fly, and makes it a prisoner within its vegetable crushing folds. In this manner the plant supplies itself with food, and on cutting one open with a knife, the bottom of the bag will be found stuffed with the skulls and limbs of water flies, reminding a person of some cannibal's cave. How wonderful are the works of the Almighty; every seed bringeth forth after its kind, and with all its special adaptations.

### MISCELLANEOUS.

#### A CANADIAN PRINTER IN LUCK.

**RUTTAN'S RIFLE.**—We were shown yesterday, by Mr. Wm. C. Ruttan, his letters patent for a new rifle, and after a thoughtful examination of his model of the projectile, and a knowledge of the distance it has been thrown, we are satisfied that this new affair is superior to all the death-dealing implements of which we have heard. Mr. Ruttan has had his invention thoroughly tested and guarantees sharp-shooting at the enormous distance of one mile. The celebrated Minie rifle—although far heavier than this—which does not exceed the weight of an ordinary

gun—has never done good work at the distance named; and all the French inventions are outdone by this effective and yet very simple contrivance of the Canadian. The slug is of a triangular shape—so constructed as to meet the least possible resistance from the air, so that in firing at long range it is not necessary to elevate the barrel. Mr. Wm. H. Soper, of London, is manufacturing the rifles, and having obtained the right for his county, is turning out a great number, but still is not able to meet the demand. Mr. Ruttan will, of course, realize a large sum of money by his ingenuity. He intends to proceed shortly to Britain and the Continent, and although we know some of the old fogies, in the army and out of it, will turn up their noses at the idea of anything good (or bad) emanating from a Colonist, yet we are quite certain that Mr. Ruttan's invention will be understood and appreciated at once by scientific and practical men. Mr. Ruttan is a practical printer, but like others who learned the art, he speedily abandoned it, and we are glad to find that he has succeeded in doing something more profitable. He belongs withal to an *inventive* family, being a nephew of Mr. Sheriff Ruttan, of Cobourg, whose improved method of ventilating and heating buildings has been admired and commended, both in the United States and Canada.—*Spectator*.

#### A HIGHER GOOD.

In Coleridge's "Aids to Reflection" we find the following aphorism and comment:—

Your blessedness is not,—no, believe it, it is not, where most of you seek it, in things below you. How can that be? It must be a higher good to make you happy.—*Leighton*.

Every rank of creatures, as it ascends in the scale of creation, leaves death behind it or under it. The metal at its height of being seems a mute prophecy of the coming vegetation, into a mimic semblance of which it crystalizes. The blossom and flower, the acme of vegetable life, divides into correspondent organs with reciprocal functions, and, by instinctive motions and approximations, seems impatient of that fixture, by which it is different in kind from the flower-shaped Psyche, that flutters with free wing above it. And wonderfully in the insect realm doth the irritability, the proper seat of instinct, while yet the nascent sensibility is subordinate thereto,—most wonderfully, I say, doth the muscular life in the insect, and the musculo-arterial in the bird, imitate and typically rehearse the adaptive understanding, yea, and the moral affections and charities, of man. Let us carry ourselves back, in spirit, to the mysterious week, the teeming work-days of the Creator: as they rose in vision before the eye of the inspired historian of *the generations of the heaven and the earth, in the days that the Lord God made the earth and the heavens*. And who that hath watched their ways, with an understanding heart, could, as the vision evolving still advanced towards him, contemplate the filial and loyal bee; the home-building, wedded and divorceless swallow; and above all, the manifoldly intelligent\* ant tribes, with their

\* See Huber on Bees, and on Ants.



commonwealths and confederacies, their warriors and miners, their husband-folk, that fold in their tiny flocks on the honeyed leaf, and the virgin sisters with the holy instincts of maternal love, detached in selfless purity,—and not say to himself, Behold the shadow of approaching humanity, and the sun rising from behind, in the kindling morn of creation! Thus all lower natures find their highest good in semblances and seekings of that which is higher and better. All things strive to ascend, and ascend in their striving. And shall man alone stoop? Shall his pursuits and desires, the reflections of his inward life, be like the reflected image of a tree on the edge of a pool, that grows downward, and seeks a mock heaven in the unstable element beneath it, in the neighborhood with the slimy water-weeds, and oozy bottom-grass, that are yet better than itself and more noble, is as far as substances that appear as shadows are preferable to shadows mistaken for substances? No! it must be a higher good to make you happy. While you labor for anything below your proper humanity, you seek a happy life in the region of death. Well saith the moral poet—

Unless above himself he can  
Erect himself, how mean a thing is man!

#### DECLIVITY OF RIVERS.

A very slight declivity suffices to give the running motion to water. Three inches per mile in a smooth straight channel, gives a velocity of about 3 miles an hour. The Ganges, which gathers the waters of the Himalay Mountains, the loftiest in the world, is, at 1800 miles from its mouth, only about 800 feet above the level, of the sea; that is about twice the height of St. Paul's Church in London, or the height of Arthur's seat, near Edinburgh; and to fall those 800 feet, in its long course, the water requires more than a month. The great river Magdalena, in South America, running for a thousand miles between two ridges of the Andes, falls only five hundred feet in all that distance. Above the commencement of the thousand miles it is seen descending in rapids and cataracts from the mountains. The gigantic Rio de le Plata has so gentle a descent to the ocean, that in Paraguay, fifteen hundred miles from its mouth, large ships are seen which have sailed against the current all the way by the force of the wind alone; that is to say, which, on the beautifully inclined plane of the stream, have been gradually lifted by the soft wind, and even against the current, to an elevation greater than that of our loftiest spires.—*Arnott's Physics.*

#### DOMESTIC MANUFACTURES.

We have had the pleasure of inspecting some samples of Spades and Shovels manufactured by D. F. Jones & Co., of Ganonoque, which were intended for exhibition at the New York World's Fair, to be opened in New York this week. The work shewn to us is of the very best description, and made from the best material. The steel is perfectly free from flaws of every description, and the handles made of the soundest wood. The handle and blade look as if they had grown together, so perfectly are they fitted. After hav-

ing examined these highly finished articles intended for exhibition, we compared them with those intended for ordinary sale and found that the latter did not suffer from the comparison. Of course the spades and shovels intended for use are not so highly finished as those intended for show, but they are well finished and made of precisely the same materials and of the same pattern, and would do as good work and as much of it as the most highly finished article. On comparing the prices of these Canadian made articles, we found that they could be laid down in Toronto at about the same price as similar articles from the United States. We are really glad to be able to add this item to the list of our domestic manufactures, and hope very shortly to see many others of the same kind added, such as scythes, saws and files. For the manufacture of files we observe that a patent has been taken out by Jackson McIntyre of Kingston, for a File cutting Machine. Should Mr. Jackson's machine answer the purpose indicated by its name, he would have done more wisely to have sent it to Sheffield, than to have taken out his patent in Canada. We shall be happy to learn that he is successful, for it is a desideratum long looked for in Sheffield, and we shall be proud to see the ancient town of files and whittles indebted to so young a country as Canada for so great an improvement in its manufactures.—*Patriot.*

#### WHAT ARE TREES MADE OF?

If we were to take up a handful of soil, and examine it under the microscope, we should probably find it to contain a number of fragments of woods, small broken pieces of branches, or leaves, or other parts of the tree. If we could examine it chemically, we should find yet more strikingly that it may be nearly the same as wood in its composition. Perhaps, it may be said the young plant obtains its wood from the earth in which it grows. The following experiment will show whether this conjecture is likely to be correct or not. Two hundred pounds of earth were dried in an oven, and afterwards put into a large earthen vessel; the earth was then moistened with rain water, and a willow tree, weighing five pounds was planted therein. During the space of five years the earth was carefully watered with rain water. The willow grew and flourished and to prevent the earth being mixed, with fresh earth being blown upon it by the wind, it was covered by a metal plate, full of very minute holes, which would exclude everything but air. After growing in the earth five years, the tree was found to have gained one hundred and sixty four pounds. And this estimate did not include the weight of the leaves or dead branches, which in five years fell from the tree.

Now came the application of the test. Was all this obtained from the earth? It had not sensibly diminished; but in order to make the experiment conclusive, it was again dried in an oven and put in the balance. Astonishing was the result—the earth weighed only *two ounces* less than it did when the willow was first planted in it! yet the tree had gained *one hundred and sixty four* pounds. Manifestly, then, the wood thus gained in the space of time was not obtained

from the earth; we are therefore obliged to repeat our question, "where does the wood come from?" We are left with only two alternatives; the water with which it was refreshed, or the air in which it lived. It can be clearly shown that it was not due to the water; we are consequently unable to resist the perplexing and wonderful conclusion, it was derived from the air.

Can it be? Were those great ocean spaces of wood, which are as old as man's introduction in to Eden, and wave in their vast and solitary luxuriance over the fertile hills and plains of South America, were all these obtained from the thin air? Were the particles which unite to form our battle ships, old England's walls of wood, ever borne the world about, not only on wings of air, but actually as air themselves? Was the firm table on which I write, the chair on which I rest, the solid floor on which I dwell, once in a form which I could not as much as lay my finger on, and grasp in my hand? Wonderful truth—all this air.—*English Paper.*

#### CHIMNEYS.

In building flue chimneys, in brick walls, the inside should be plastered as carefully and smoothly as the finishing coat of a parlor. Masons do not do this; they put on the common lime used by them for jointing, and the interior surface is covered without a proper regard being paid to the functions of the chimney. The reasons for laying on the coat of a chimney so smooth, are obvious, if we take into consideration that the rough edges of the lime, when dry, serve as points of attraction and adhesion for soot, because they resist the passage of the smoke. A smooth chimney has a *better draught*, to use a common term, than one with a rough interior; the reason of this is also obvious, because rough surfaces retard the passage of smoke, as well as water or any other substance in motion is retarded by them. In the building of houses, masons are too careless about these things; indeed the majority of them do not appear to have any knowledge of natural philosophy, yet there is no man living, be he mason, plasterer, or hod-carrier, but stands high as a workman, according as he is well informed.

Were it not for the general form of the walls of buildings, it would be much better to have the chimneys built of round or oval shape, like the funnel of a steamboat. The flues in brick houses should be built circular inside; this would be a little more troublesome, yet the flues would be all the better for it; yet, if they were only plastered smooth, no one would have to complain of a square or rectangular form.

Some chimneys are built with tremendous gaping fire-places, others are built wide at the base, and taper towards the top: both plans are erroneous. A moderate width of fire place is all that is required (we have wonderfully improved on our forefathers in this respect,) and it would be far better if a chimney is built tapering, to have the widest part at the top, where the smoke is to make its exit. A reason for this is, that when the smoke is confined below, and suddenly allowed to expand at the top, it forms a partial vacuum, which draws up the smoke. It is upon

this principle that Prof. Epsy's Ventilator, is constructed. It may be said the open expanse above the chimney, allows the smoke to expand, therefore it is of no use to widen the top of the chimney inside; this is very true.

The rule which should be followed in the building of a chimney, is to build it of a uniform diameter from bottom to top, not too wide and smoothly covered with plaster inside.

The object of writing this article was to direct attention to making the interior of chimneys smooth and well covered with lime. In many cases there are chimneys built for small houses, of a diameter which would enable them to carry smoke away from one of Collins' steamships. Masons do not appear to take into consideration, when they build a chimney, what it has to do, namely to carry off the smoke from one or two fires. The narrower the chimney the better will it draw, consequently a wide chimney for a small fire—a very common error—embraces a very scientific principle, as erroneous as it would be to array Tom Thumb in a suit belonging to Giant Hale, for the purpose of refrigeration in the dog-days. We have used the term *draw*, in respect to the current in the chimney, as it is generally understood; the principle of draught in a chimney has nothing to do with pulling or drawing the smoke; pressure, expansion, and absorption are the governing causes of ariel currents.—*Sci. American.*

#### SOURCE OF THE NUTRITIOUS PROPERTY OF VEGETABLES.

The nourishing property of corn, wheat, and other grains, is owing to the gluten contained in them. And this gluten consists, in great part, of nitrogen. It is of course an important object with the farmer, to increase the proportion of gluten, and that is done by supplying additional nitrogen in the aliment of the plant. Carbonic acid and water are the chief sources of *growth*. Nitrogen is the principal element constituting the nutritive quality. The atmosphere contains a large quantity of nitrogen. It is not supposed to be taken up by vegetables, however, from the atmosphere in its simple form, but, by combination with the hydrogen, in the form of ammonia. By the digestion of the ammonia, the nitrogen is afterward separated in the plant and used, to constitute the peculiar product, gluten, to which its nutrition is owing.

Ammonia is produced by the decay of animal substances. In this way it is that the application of manures is so beneficial to plants;—by the supply of ammonia furnished, which being digested in the plant results in a separation of nitrogen, which enters in the tissue of plants and produces their nutritive quality.

Ammonia is readily absorbed by water, and the rain or dew becomes impregnated with it, and it is thus administered to vegetables, in small quantities. This may be sufficient for their existence and ordinary growth. But a greater supply of ammonia is necessary to some plants on account of their peculiar economy. This is the case with all plants containing much gluten. And this substance may be greatly increased by a liberal supply of manures from which ammonia



is more abundantly provided.—These plants can therefore only be cultivated advantageously by a frequent application of manure, or otherwise an equivalent provision of ammonia in another form. Corn ordinarily, when raised in vegetable mould, contains nine and a half per cent. of gluten; but raised on land manured with blood or urine, has been found to contain thirty-five hundredths of gluten.

Gypsum has the quality of absorbing ammonia from the atmosphere, and yield it again to water which may soak through it. This is the mode in which gypsum has a beneficial action on vegetation, while the gypsum itself held in solution in water is considered injurious.—*N. E. Farmer.*

#### DEVELOPMENT OF THE LUNGS.

Much has been said and written upon diet, eating and drinking; but I don't recollect ever noticing a remark in any, written upon breathing, or the manner of breathing. Many, and especially ladies in easy circumstances, contract a destructive mode of breathing. They suppress their breathing, and contract the habit of short, quick-breathing, not carrying half-way down the chest, and scarcely expanding the lower portions of the chest at all. Lacing the bottom of the chest, also, greatly increases this evil, and confirms a bad habit of breathing. Children that move about a good deal in the open air, and in no way laced, breathe deep and full to the chest, and every part of it. So also with out-door laborers and persons who take a great deal of exercise in in the open air, because the lungs give us the power of action, and the more exercise we take, especially out of doors, the larger the lungs become, and the less liable to disease. In all the occupations that requires standing keep the body straight. If at a table, let it be high and raised up, nearly to the arm-pits, so as not to require you to stoop; you will find the employment much easier—not one half so fatiguing—while the form of the chest and the symmetry of the figure will remain perfect. You have noticed the fact that a vast many tall ladies stoop, while a great many short ones are straight. This rises, I think, from the table at which they sit to work, or study being medium height; far too low for a tall person, and about right for a short person. This should be carefully corrected and regarded, so that each lady may occupy herself at a table suited to her, and thus prevent the possibility of the necessity of stooping.—*Dr. Fitch.*

#### HOW TO CATCH A SHEEP.

In catching sheep, never seize them by the wool on the back, as it hurts them exceedingly, and has in some cases been known to kill them, particularly in hot weather, if they are large and fat. Indeed the best way is to avoid the wool altogether, and to accustom yourself to take them by the hind leg, or what is better, by the neck, placing one hand under the jaws, and the other at the back of the ears, when by lifting up the head, a child may hold almost any sheep. But much depends on how a flock is treated. Few people are sufficiently gentle with sheep. In Maryland, and south of it, sheep are rarely approached near enough to touch or catch them,

except as farmers are themselves treated, in all countries, and alike by tyrants and demagogues, when they are to be *sheared or slaughtered*.

By kind and gentle usage, and occasional salting, a man may have his sheep so tame that he may play with them, as every man that has a heart will sometimes do with his dog. At any rate the feeling and thoughtful farmer, will never suffer his sheep, or any thing else under his guardianship, to be unnecessarily terrified or otherwise ill treated.—*Rural New Yorker.*

#### ON THE STUDY OF BOTANY.

"To the Agriculturist, the Gardener, the Physician, and the Artist, a correct—and even scientific—knowledge of the Vegetable Kingdom is, to a certain extent, indispensable—for, a *scientific* knowledge of plants merely implies an acquaintance with their true character and properties—and *that*, every person whose business is with plants, is bound in honesty and good faith—as well by the requirement of self-interest—to possess. Such knowledge is, of course, to be best obtained by means of the most skillful, systematic, and facile method of investigation; or, in other words, by the help of a truly *scientific arrangement*.

The successful *culture* of Vegetable Products, requires a knowledge of the character and habits of the Plants which yield them; and that knowledge—so far as it is possessed and applied—is neither more nor less than *practical Botany*. He who is acquainted with the greatest number, and best understands how to multiply the most valuable, is at once the best Botanist, and the most accomplished Agriculturist and Gardener.

Is it not desirable, then, that we should extend our knowledge of the useful Plants—and learn to estimate correctly, their true and relative values? Is it not necessary, also, that we should have a competent knowledge of the pernicious and worthless Plants? But, to accomplish this, is to make a respectable progress in the Science of *Botany*. Hence I contend, that a certain portion of Botanical knowledge is indispensable to the *Farmer* who aspires to excellence in his profession—and who would thus aid in elevating that profession to the rank which it is entitled to hold, among human pursuits. It is not necessary that he should prosecute the study in all its extent; for *that* would be the business of a life-time. But he ought to make himself acquainted with the Vegetation of the region, or district, in which he resides—and he should understand well the character of all those plants which immediately concern him, as an Agriculturist. This is a duty by no means so difficult as is generally supposed. And with the aid now afforded by elementary and systematic writers on the subject, the attainment is rendered as agreeably interesting, to an intelligent mind, as it is profitable in its practical results.—The man who does not know the more important plants by which he is surrounded—whose eye has not learnt to discriminate their characters—is deficient in one of the primary qualifications of an enlightened cultivator of the soil. In truth, it is mortifying to see a good practical Farmer, or Gardener, ignorant of some of the very plants which

it most behoves him to know—wasting his time, and his energies, in mis-directed efforts to protect himself from the vegetable pests which invade his grounds. Many of our farms are already overrun with worthless weeds, which are extremely difficult to subdue; and we are menaced with the inroads of others still more annoying and pernicious. Yet there are but few of our Agriculturists who are able to identify these invaders, when they make their appearance—or who seem to be aware of the importance of prompt and vigorous measures for their extirpation.

This ought not to be the case, among a people invested with the lofty privileges which we enjoy. The rising generation, at least, should be taught to notice what they see—to observe, to think, and to discriminate. Our young Farmers should learn to cultivate their *minds*, as carefully as they do their *acres*; and not be permitted to grow up in the neglect of their noblest faculties—nor—as a modern writer expresses it—be content ‘to wander among the productions of Nature, with little more perception, or enjoyment of her charms, than a cow on a common, or a goose on a green.’”

In reflecting upon the interesting character of Botanical knowledge, and upon the many inducements to acquire it—one is naturally led to ask, why a rational acquaintance with the Vegetable Products which every where surround us, and are literally strewn along our paths, should not be adequately inculcated in all our *Seminaries*—and especially I would ask, why such a humanizing and elegant Science should not be made an indispensable branch of *Female Education*. As a mere *accomplishment*, it is entitled to rank with any of those ornamental acquirements to which so much time is devoted. As a means of enlarging the views, and disciplining the mind—training it to habits of correct observation, and profitable reflection—the Study of Plants is far superior to many of the fashionable and fugitive attainments, which so generally engross the attention of young Ladies. It is a pursuit, too, which carries with it its own reward. The knowledge which it affords, is at once pleasing in the acquisition, and of enduring value. It is continually called for, and always at command—ready to minister to the instruction and gratification of the possessor—whether in the Garden, the Field, or the Forest.

“These Studies—said the Roman Orator, on another occasion—and the avement is no less applicable here—these Studies are the intellectual nourishment of youth, and the cheering recreation of age; they adorn prosperity, and are the refuge and solace of adversity; they are pleasant at home, and are no incumbrance abroad; they abide with us by night—go with us in all our travels—and lend additional charms to the attractions of our rural retreats.”

Those who make only occasional visits, or excursions, in the country, will find their pleasure greatly enhanced by an acquaintance with the Plants which mainly contribute to the charms of the scenery. But, by those whose constant residence is in the midst of the vegetable tribes, a reasonable knowledge of Botany should be regarded—not merely as an accomplishment, but—as

one of the indispensable qualifications for the duties of rural life. I have already intimated the opinion, that an *American Farmer* should blush to be ignorant of the objects of his peculiar care; and I know not why a *Farmer's Wife*, or *Daughter*, should be entirely excused for a like deficiency. On the contrary, I am of opinion that it is to *Wives and Daughters* we must look, for the commencement of a salutary reformation in intellectual pursuits and discipline. The work must begin at that early period of life, when the character is being moulded under female auspices and care. The knowledge here advocated, is unquestionably desirable for both sexes; and I sincerely believe, that the most effectual method for diffusing it, will be—first properly to *educate*, and then—to invoke the *co-operation of the Ladies*. Their potent influence has been felt, and owned, in many a noble cause; and I cannot permit myself to doubt its controlling efficacy in this.”—*Darlington's Flora Cestrica*.

#### SCIENCE ANSWERING SIMPLE QUESTIONS.

WHY is rain water soft? Because it is not impregnated with earth and minerals.

Why is it more easy to wash with soft water than with hard? Because soft water unites freely with soap, and dissolves it instead of decomposing it, as hard water does.

Why do wood ashes make hard water soft? 1st. Because the carbonic acid of wood ashes combines with the sulphate of lime in the hard water, and converts it into chalk; 2nd. Wood ashes converts some of the soluble salts of water into insoluble, and throws them down as a sediment, by which the water remains more pure.

Why has rain water such an unpleasant smell when it is collected in a rain water tub or tank? Because it is impregnated with decomposed organic matters, washed from roofs, trees or the casks in which it is collected.

Why does water melt salt? Because very minute particles of water insinuate themselves into the pores of the salt, by capillary attraction, and force the crystals apart from each other.

How does blowing hot foods make them cool? It causes the air which has been heated by the food to change rapidly, and give place to fresh cool air.

Why do ladies fan themselves in hot weather? The fresh particles of air may be brought in contact with their face, by the action of the fan; and as every fresh particle of air absorbs some heat from the skin, this constant change makes them cool.

Does a fan cool the air? No, it makes the air hotter by imparting to it the heat of our face, but cools our face by transferring its heat to the air.

Why is there always a draft through key holes and window crevices? Because the external air, being colder than the air of the room we occupy, rushes through the window crevices to supply the deficiency caused by the escape of warm air up the chimney, &c.

If you open the lower sash of a window, there is more draft than if you open the upper sash.



Explain the reason of this? If the lower sash be open, cold external air will rush freely into the room and cause a great draft inward; but if the upper sash be open, the heated air of the room will rush out, and of course there will be less draft inward.

By which means is a room better ventilated. By opening the upper sash, because the hot vitiated air, which always ascends towards the ceiling, can escape more easily.

Why does the wind dry damp linen? Because dry wind, like a dry sponge, imbibes the particles of vapor from the surface of the linen as fast as they are found.

Which is the hottest place in a church or chapel? The gallery.

Why is the gallery of all public places hotter than the lower parts of the building? Because the heated air of the building ascends, and all the cold air which can enter through the doors and windows, keeps to the floor till it has become heated.—*Dr. Brewer's Guide to Science.*

#### SPEED OF THE HORSE.

The maximum speed of the race-horse appears to be at the rate of a mile a minute; for few, if any horses can retain the full velocity of this rate for even that time. It is said, but never was proved, that Flying Childers ran at Newmarket one mile in the minute; certain it is that this celebrated horse, when carrying nine stone two pounds, ran over the round course, which is three miles, six furlongs, and ninety-three yards, in six minutes and forty seconds. Bay Malton ran four miles at York, in 1763, in seven minutes and forty-three seconds and a half. Eclipse also ran the same distance, on the same course, in eight minutes, with twelve stone. The most extraordinary instance on record of the stoutness as well as the speed of the race-horse was displayed in 1786, when Mr. Hull's Quibbler ran twenty-three miles round the flat at Newmarket in fifty-seven minutes and ten seconds. The speed of the greyhound, and that of the hare, is but little inferior to that of the race-horse, but their powers of endurance at their utmost velocity are not equal to his.

The racing gallop is evidently but a succession of leaps, in which the fore-legs and hind-legs start in pairs, each pair acting simultaneously. The hand-gallop is not so rapid a movement; in it the right-legs are a little in advance of their fellows. It is well ascertained that a horse can never pass at once from a state of rest into the gallop of full speed, but must begin with the hand-gallop; and cunning jockeys sometimes derive profit from this circumstance by wagering with the unwary, that no horse shall be found to gallop one hundred yards while a man runs fifty, the two starting together. In this the man is sure to win the race, for the horse has not time enough to acquire the necessary momentum, as he would do if the race were for a hundred and fifty yards.

A bet against time was won in July, 1840, by an Arab horse at Bangalore, in the presidency of Madras, to run four hundred miles in four consecutive days. Mr. Frazer relates, in his "Tartar Journey," a still more striking instance of the

speed and bottom of the Arab; a horse of that breed carried him from Shiraz to Teheran, five hundred and twenty-two miles, in six days, remained three at rest and went back in five days, remained nine at Shiraz, and returned again to Teheran in seven days. Another high-blooded Arabian carried Mr. Frazer from Teheran to Koom, eighty-four miles, in about ten hours. A courier, whom Major Keppell fell in with between Kermanshaw and Hamadan, places one hundred and twenty miles' distance from each other, performed that journey, over a rugged mountainous tract, in little more than twenty-four hours; and the next morning set off on the same horse for Teheran, two hundred miles further, expecting to reach it on the second day.—*English Paper.*

#### VEGETATION OF THE FROZEN REGION.

The following extract is from Seaman's "Botany of the Voyage of H. M. ship 'Herald,' under the command of Captain Kellet," in search of Sir John Franklin. The accounts of the remarkable phenomena exhibited in those icy regions will be found new and exceedingly interesting:

"The soil is always frozen, and merely thaws during the summer, a few feet below the surface. But the thawing is by no means uniform. In peat it extends not more than two feet, while in other formations, especially in sand or gravel, the ground is free from frost to the depth of nearly a fathom, showing that sand is a better conductor of heat than peat or clay, and corroborating the observation of the accurate J. D. Hooker, who, after a series of experiments in India, arrived at the same conclusion. The roots of the plant, even those of the shrubs and trees, do not penetrate into the frozen subsoil. On reaching it, the recoil as if they touched upon a rock, through which no passage could be forced.

"It may be surprising to behold a vegetation flourishing under such circumstances, existing independent, it would seem, of terrestrial heat. But surprise is changed into amazement on visiting Kotsbue Sound, where on the tops of icebergs, herbs and shrubs are thriving with a luxuriance only equalled in more favored climes. There, from Elephant to Eschholtz Point, is a series of cliffs from seventy to ninety feet high, which presents some striking illustrations of the manner in which Arctic plants grow. Three distinct layers compose these cliffs. The lower, as far as it can be seen above the ground, is ice, and from twenty to fifty feet high. The central is clay, varying in thickness from two to twenty feet, and intermingled with remains of fossil elements, horses, deer, musk-oxen. The clay is covered by peat, the third layer bearing vegetation, to which it owes its existence. Every year, during July, August and September, masses of ice melt, by which the uppermost layers are deprived of support and tumble down. A complete chaos is thus created; ice, plants, bones, peat and clay, are mixed in the most disorderly manner. It is hardly possible to imagine a more grotesque aspect. Here are seen pieces still covered with lichens and masses, there a shoal of earth, with bushes of willows; at one place a lump of clay

with senecious and polygonums, of another the remnant of the mammoth, the tufts of hair peculiar to burial places, and evidently decomposed animal matter. The foot frequently tumbles over osteological remains, some elephants' tusks measuring as much as twelve feet in length, weighing more than two hundred and forty pounds. Nor is the formation confined to Escholtz Bay. It is observed in various parts of Kotzebue Sound, on the River Buckland, and in other localities, making it probable that a great portion of North-western America is underneath a solid mass of ice. With such facts before us, we acknowledge that terrestrial heat exercises but a limited and indirect influence upon vegetable life, and that to the solar rays we are mainly indebted for the existence of those forms which clothe with verdure the surface of our planet.

"A curious fact is stated respecting the condition of the vegetable world during the long day of the Arctic summer. Although the sun never sets, while it lasts, plants make no mistake about the time, when if it be not night, it ought to be; but regularly as the evening hours approach, and when a midnight sun is several degrees above the horizon, droop their leaves, and sleep even as they do at sunset in more favored climes.

"If man," observes Mr. Seaman, 'should ever reach the pole, and be undecided which way to turn when his compass becomes sluggish, his timepiece out of order, the plants which he may happen to meet, will show him the way; their sleeping leaves tell him that midnight is at hand, and at that time the sun is standing in the north.'"  
—*Fitchburg Reville.*

#### POISONED VALLEY.

A singular discovery has lately been made near Batten, in Java, of a poisoned valley. Mr. Alexander Loudon visited it last July, and we extract a paragraph from a communication on the subject, addressed by him to the Royal Geographical Society:—

"It is known by the name of Guevo Upas, or Poisoned Valley; and following a path which had been made for the purpose, the party shortly reached it with a couple of dogs and fowls, for the purpose of making experiments. On arriving at the mountain, the party dismounted and scrambled up the side of a hill, at a distance of a mile, with the assistance of the branches of trees and projecting roots. When at a few yards from the valley, a strong, nauseous, suffocating smell was experienced; but on approaching the margin, the inconvenience was no longer found. The valley is about half a mile in circumference, of an oval shape, and about thirty feet in depth. The bottom of it appeared to be flat, without any vegetation, and a few large stones scattered here and there. Skeletons of human beings, tigers, bears, deer, and all sorts of birds and wild animals, lay about in profusion. The ground on which they lay at the bottom of the valley appeared to be a hard sandy substance, and no vapor was perceived. The sides were covered with vegetation. It was proposed to enter it; and each of the party having lit a cigar, managed to

get within twenty feet of the bottom, where a sickening, nauseous smell was experienced, without any difficulty of breathing. A dog was now fastened to the end of a bamboo and thrust to the bottom of the valley; while some of the party, with their watches in their hands, observed the effect. At the expiration of fourteen seconds he fell off his legs, without moving or looking around, and continued alive only eighteen minutes. The other dog now left the party and went to his companion. On reaching him, he was observed to stand quite motionless; and at the end of ten seconds fell down; he never moved his limbs after, and lived only seven minutes. A fowl was now thrown in, which died in a minute and a quarter; and another, which was thrown in after it, died in the space of a minute and a half. A heavy shower of rain fell during the time that these experiments were going forward, which, from the interesting nature of the experiments, was quite disregarded. On the opposite side of the valley to that which was visited, lay a human skeleton, the head resting on the right arm. The effect of the weather had bleached the bones as white as ivory. This was probably the remains of some wretched rebel hunted towards the valley who had taken shelter there, unconscious of its character.

#### CONDENSED HISTORY OF STEAM.

About 28 years B. C., Hero of Alexandria formed a toy which exhibited some of the powers of steam, and was moved by its power.

A.D.450, Anthemius, an architect, arranged several cauldrons of water, each covered with the wide bottom of a leathern tube, which rose to a narrow top, with pipes extended to the rafters of the adjoining building. A fire was kindled beneath the cauldrons, and the house shaken by the efforts of the steam ascending the tubes. This is the first notice of the power of steam recorded.

In 1543, June 17, Blasco D. Garoy tried a steam-boat of 209 tons with tolerable success at Barcelona, Spain. It consisted of a cauldron of boiling water, and a moveable wheel on each side of the ship. It was laid aside as impracticable. A present, however, was made to Garoy.

In 1650 the first railroad was constructed at Newcastle on Tyne.

The first idea of a steam engine in England was in the Marquis of Worcester's "History of inventions," A.D. 1663.

In 1710 Newcomen made the first steam engine in England.

In 1718 patents were granted to Savery for the first application of the steam engine.

In 1734 James Watt made the first perfect steam engine in England.

In 1736 Jonathan Hulls set forth the idea of steam navigation.

In 1778 Thomas Paine first proposed this application in America.

In 1781 Marquis Jouffroy constructed one on the Saone.

In 1785 two Americans published a work on it.



In 1789 William Symington made a voyage in one on the Forth and Clyde canal.

In 1802 this experiment was repeated.

In 1782 Ramsey propelled a boat by steam at New York.

In 1787 John Fitch, of Philadelphia, navigated a boat by a steam engine on the Delaware.

In 1793 Robert Fulton first began to apply his attention to steam.

In 1793 Oliver Evans, a native of Philadelphia, constructed a locomotive steam engine to travel on a turnpike road.

The first steam vessel that crossed the Atlantic was the *Savannah*, in the month of June, 1819, from Charleston to Liverpool.—*Hunt's Merchant's Magazine*.

#### CURRENT WINES.

As currants, in many places, will soon be ripe, we give the following receipt for making wine from them, believing that, in cases of sickness, it is very excellent:—Gather the currants when fully ripe; break them well in a tub, press them through a sifter, then strain them through a flannel bag, and measure the juice; add two gallons of water to one of juice, put three pounds of New Orleans sugar, stir it till the sugar is quite dissolved. In straining the juice of the currant, use a hair sieve, and not one of wire; then use a close tow linen bag, afterwards a flannel one to pass the juice through. The juice must not be permitted to stand over night. Observe that the cask be sweet and clean, and such as has never been used for beer or cider, and, if new, let it be well seasoned. Do not fill the cask too full, otherwise it works out the bung, which is injurious to the wine; rather make a proportionate quantity over and above, that, drawing off some of the wine, you may have enough to fill up the cask. Lay the bung lightly on the hole, to prevent flies, &c., from creeping in. In three or four weeks the bung hole may be stopped up, leaving only the vent hole open till it has done working, which is generally the middle or last of October. It may then be racked off; it is best to leave it on the lees till spring, and, if not wanted for present use, it may be left on the lees for two years without damage. When drawing off, bore a hole an inch at least from the tap hole, and a little to one side of it, that it may run off clear of the lees.

Black currant wine is also excellent in cases of sickness, such as for diseases of the bowels.

#### IMPROVEMENTS IN BUTTER FIRKINS.

Butter firkins, as at present constituted, require to be sawn horizontally through the centre, or the head removed, in order to obtain the butter, which is liable to be injured from the consequent exposure to the air. As an improvement on the above, a new method has been invented by Daniel Minthorn, of Watertown, N. Y., who has taken measures to secure a patent. The firkin is made to consist of two parts, which are connected together by means of a taper flange on the core of the one, which fits into a corresponding recess cut into the edge of the other, the two parts being kept firmly together with hooks or any other suitable fastening. The great advantage of a firkin of this description is, that small quantities of butter can be taken out when required, and the firkin

afterwards closed air-tight, which renders it superior to those of the ordinary construction for family use; moreover the firkin can be used repeatedly for the same purpose until completely worn out.—*Sci. American*.

#### THE RIND OF FRUIT INDIGESTIBLE.

This fact cannot be too strongly impressed upon the public. It applies to all fruit, without exception, and includes also, the pellicle or skin of kernels and nuts of all kinds. The edible part of fruit is particularly delicate, and liable to rapid decomposition if exposed to the atmosphere; it is, therefore, a provision of nature to place a strong and impervious coating over it, as a protection against accident, and to prevent insect enemies from destroying the seed within. The skin of all the plum tribe is wonderfully strong, compared with its substance, and resists the action of water and many solvents in a remarkable manner. If not thoroughly masticated before taken into the stomach, the rind of plums is rarely, if ever, dissolved by the gastric juice. In some cases, pieces of it adhere to the coats of the stomach, the same as wet paper clings to the bodies, causing sickness and other inconvenience. Dried raisins and currants are particularly included in these remarks, showing the best reasons for placing the fruit upon the chopping board with the suet in making a pudding of them, for if a dried currant passes into the stomach whole it is never digested at all. When horses eat oats or beans that have not been through a crushing mill, much of this food is swallowed whole, and in this state, being perfectly indigestible, the husk or pellicle resisting the advents of the stomach, there is so much loss to nutrition. Birds, being destitute of teeth, are provided with the apparatus for grinding their seed, namely, with the gizzard, through which the seed passes, and is crushed prior to digestion. The peels of apples and pears should always be cast away. Oranges we need not mention as this is always done. Orleans, greengages, damsons, and all plums, should be carefully skinned if eaten raw, and if put into tarts, they should be crushed before cooking. Nuts are as indigestible as we could desire, if the brown skin be not removed or blanched as almonds are generally treated.

#### PAINT FOR BRICK HOUSES.

A correspondent of the *Ohio Farmer* has used a cheap and very durable paint for the exterior of brick dwellings, which has already stood several years, and is now quite as fresh as when first applied. It consists simply of whitewash, with sulphate of zinc as a fixing ingredient. Any requisite shade is given by adding the colors used by house-painters.—A clear and rich cream color may be obtained by applying yellow ochre to the common new brick; a livelier and warmer shade will be added by a little Venetian red. Burnt sienna may likewise be used. This paint is far cheaper than oil paint, costs but little more than common whitewash, and nothing will remove it but the severest friction.

CHURNING.—Butter should always be churned in a room or apartment, the temperature of which is between thirty and sixty degrees. At sixty degrees, butter is obtained in the greatest quan-

tity, and at about fifty-two degrees, of the best quality. To those interested in dairy management, these facts are of the highest practical importance. A thermometer should always be suspended in the dairy or milk room, and all the operations regulated by it.

#### STEAM ENGINES ON FARMS.

A steam engine might profitably be fitted up on many farms. The application of steam power on farms is yet in its infancy; and it is objected to by many, that for the purpose of small farms it is unnecessary and expensive; but on those consisting of 800 to 1000 acres or upwards, it is recommended. The number of operations that can be so readily performed at one time with the aid of proper machinery—the great dispatch—the amount of work that can be accomplished—and the small cost of the sustaining power, being that of a few bushels of coals per diem, are facts too important not to attract the attention of every scientific farmer.

#### SHINGLE MACHINE.

Measures to secure a patent for an improved Shingle Machine have been taken by Samuel Bell, of South Hanover, Indiana. There are several improvements on this machine, which is intended to cut shingles to a shape superior to those generally used.—The form of the shingle is one of the specified improvements, and its merit consists in making the shingle of an equal thickness for one-third of its length, the remaining two-thirds being tapered, as to its thickness, to a point, which is effected by shaving down the under side, or that side of the shingle which is not exposed to the weather.

A sliding frame carries the splitting knife and also the first shaving knife, up to the block of wood which is to be formed into shingles. The shape of the splitting knife is peculiar, the cutting edge being concave, so that the edges of the shingle are split before the middle part, a plan which requires less power and works better. The before-mentioned sliding frame or carriage is worked by means of a double crank, which also serves to impel an apparatus for clearing away the shavings from the first shaving knife and works a vibrating ram that moves the shingle forward to undergo the finishing process, which is accomplished by using two rollers, one of which performs one of the three offices of pressing, feeding, and cleaving; the other roller is shaped in a peculiar manner, being made concentric for one-third of its diameter, and the remaining two-thirds increasing in size in the form of an involute curve: in fact it has an eccentric motion, so that the shingle, being forced along between this roller and the finishing knife, is formed to the shape described. Two other rollers then remove and deliver the finished shingle.

The inventor mentions other ingenious substitutes for the eccentric roller just described, and has many excellent arrangements for the various requirements of the machine.—*Sci. American.*

#### THE SABBATH.

"The rest of the Sabbath is as necessary after the engagement of the week, as is the night's rest after the work of the day. To the one we go

instinctively, forced by fatigue. It is well if we observe the other; impelled by moral consideration, before suffering the penalty attached to its violation, of which no instinct gives us warning. After six days of labor our strained muscles need a season to renew their elasticity—our irritable nerves to recover their normal state—our fretted spirits to resume their equanimity. A simple change of necessary labor does a great deal; the entire cessation of all that is unnecessary does still more. The fitting devotional exercises of the day are calling and soothing, and productive of that healthy state of mind with which it is desirable to enter upon the honest duties of the succeeding day. The influence of the Sabbath on the week's tumultuous cares, is like oil poured on a stormy sea. Stretched out over the hurrying crowd of daily engagements, like the road of the Prophet over the Red Sea, it piles the waves up on either side, and we pass through them dry-shod.

"O day, most calm, most bright!

The fruit of this, the next world's bud;

The endorsement of supreme delight,

Writ by a friend, and with his blood;

The couch of time; care's balm and bay—

The week were dark but for thy light;

Thy torch doth show the way."

**REMEDY FOR CANCER.**—Col. Ussery, of the parish De Soto, informs the editor of the *Cuddo Gazette* that he fully tested the remedy for this troublesome disease, recommended to him by a Spanish woman, a native of the country. The remedy is this: take an egg and break it; pour out the white, retaining the yolk in the shell; put in salt; and mix with the yolk as long as it will receive it; stir them together until a salve is formed; put a portion of this on a piece of sticking-plaster, and apply it to the cancer about twice a day. He has tried the remedy twice in his own family with complete success.

**A CHEAP FILTER.**—An efficient a filter as can possibly be constructed may be made in a few minutes by any person, and at the cost of a few pence. Procure a clean flower pot of the common kind, close the opening in the bottom by a piece of sponge, then lay in the inside a layer of small stone, previously well cleansed by washing, this layer may be about two inches deep, the upper stones being very small; next procure some freshly burnt charcoal, which has not been kept in a damp or foul place, as it rapidly absorbs any strong smells, and so becomes tainted and unfit for such purpose; reduce this to powder, and mix it with twice its bulk of clear, well washed, sharp sand; with this mixture fill the pot to within a short distance of the top, covering it with a layer of small stones, or what is perhaps better, place a piece of thick flannel over it, large enough to tie round the rim of the pot outside, and to form inside, into which the water to be filtered is to be poured, and which will be found to flow out rapidly through the sponge in an exceeding pure state. The flannel removes the grosser impurities floating in the water, but the latter absorbs much of the decaying animal and vegetable bodies actually dissolved in it; when it becomes charged with them it loses this power, hence the necessity for a supply of fresh charcoal at intervals.



## Poetry.

### LIFE'S HARVEST.

BY WILLIAM EDWARD KNOWLES.

Ho, reaper of Life's Harvest,  
Why stand with rusted blade,  
Until the night draws round thee,  
And day begins to fade?  
Why stand ye idle, waiting  
For reapers more to come?—  
The golden morn is passing,—  
Why sit ye idle, dumb?  
Thrust in your sharpen'd sickle,  
And gather in the grain;  
The night is fast approaching,  
And soon will come again.

Thy Master calls for reapers,  
And shall he call in vain?—  
Shall sheaves lie there ungathered,  
And waste upon the plain?  
Come down from hill and mountain,  
In mornings ruddy glow,  
Nor wait until the dial  
Points to the noon below.  
And come with strong sinew,  
Nor faint in heat nor cold;  
And pause not till the evening  
Draws round its wealth of gold.

And mount the crumbling watch-towers,  
And herald on the truth;  
Preach out the golden precepts,  
To wild and wayward youth,  
Mount up the heights of Wisdom,  
And crush each error low;  
Keep back no words of knowledge  
That human hearts should know.  
Be faithful to thy mission,  
In the service of thy Lord;  
And then a golden chaplet  
Shall be thy just reward.

## EDITOR'S NOTICES.

### POSTMASTERS AND SUBSCRIBERS.

In consequence of complaints having been received, of Postmasters exacting postage for the *Agriculturist*; we would, for their future guidance observe, that by the special permission of the Post Master General, the *Agriculturist* is transmitted to Subscribers FREE OF CHARGE.

### THE PROVINCIAL EXHIBITIONS OF UPPER AND LOWER CANADA.

We request our readers to notice that a Grand Provincial Exhibition will be held at Montreal, on the 27th, 28th, 29th and 30th, of September next, under the auspices of the *Agricultural Association of Lower Canada*. From the efforts and arrangements that are being made, and the highly advantageous situation of Montreal for such a purpose, there can be no doubt of the success of the undertaking.

The Annual Exhibition of the *Agricultural Association of Upper Canada*, will take place this year, in the City of Hamilton, the week following the Montreal Show, viz:—October 4th, 5th, 6th and 7th.—An efficient Local Committee has been for some time in active operation; tenders for fencing, buildings, &c. have been taken,

and from the situation of Hamilton, which is so easily accessible from all parts of the Province, and the general interest hitherto manifested in this annual gathering, the forthcoming display of the industrial products of Upper Canada, it may be safely assumed, will not be inferior to previous occasions.

It should be distinctly understood that according to the provision of the present Agricultural Statute, *both Exhibitions will be open to competition, from all parts of United Canada.*

Premium lists, containing rules, regulations &c., for either Exhibition can be had by applying to the Secretary of the Board of Agriculture of U. C. in Toronto.

### VENTILATING RAILWAY CAR.

We clip the following from the *Daily Rochester Union* of July 19th, and are glad to see that the inventions of our enterprising countryman, Mr. Ruttan, is beginning to be understood and appreciated in the States as well as on this side of the lines. Mr. Ruttan has received from men of the highest standing and attainments residing in different parts of the Union, highly complimentary testimonials of the value and efficiency of his mode of ventilating and warming buildings, wherever it has been properly adopted. The application of the system to railway carriages, especially in a climate like that of North America, is of the greatest importance, and cannot fail to promote, in a high degree, the comfort and health of the travelling community:—

"We had the pleasure, a few days since, of riding from Rochester to Syracuse in a car in which was used the patent ventilator. And it was, indeed, a pleasure thus to ride, after having been exposed to the intolerable heat and dust in an ordinary car. The ventilator enabled us to keep the car entirely closed, and thus prevented the ingress of dust, cinders, sparks and smoke, while, at the same time, there was a perfect circulation of pure, cool air, rendering every one comfortable. The only wonder is that any of the other kinds of cars are in use. This ventilator has been tried since last winter, and has been found to work admirably. In cold weather it regulates the heat, keeping an even temperature in every part of the car.

"Travelling by railroad, in summer time, is almost intolerable, on account of the dust which fills the car. We think, therefore, that the management owe it to the public to adopt every well tested improvement, which do away with or lessen the evil. The ventilator in question, we are convinced will most effectually, and it ought to be introduced into general use.—*Buffalo Daily Courier.*

"We believe the car above alluded to is ventilated on the plan of Mr. Ruttan, of Cobourg,

Canada West, Sheriff of Newcastle District.—This is not the first disinterested testimonial that we have seen bestowed upon this car. It is but just to Mr. Ruttan, that the inventor or discoverer be known. He is a gentleman who has paid much attention to the subject of ventilation, but does not seem to seek any notoriety in connection with his discoveries. Should the method of ventilation, adopted by Mr. R., fall into the hands of some shrewd, money-making Yankee, it would soon be applied successfully to every railway car in America."

#### REPORT OF THE AGRICULTURAL SEMINARY OF TEMPLEMAYLE IRELAND.

We are indebted to the courtesy of the Canadian Agricultural Commissioner,—Mr. KIRKWOOD, who is now in Belfast, for a copy of this document.

#### THE JOURNAL OF THE CHEMICO AGRICULTURAL SOCIETY OF ULSTER: Belfast, June, 1853.

We thankfully acknowledge the receipt of this valuable periodical for June, and shall be happy to receive it regularly in exchange. A lengthened notice of the Society under whose auspices it is published, will be found in our first article. We shall refer more at length to this publication in our next.

#### MINER'S DOMESTIC POULTRY BOOK: Rochester N. Y.:—G. W. Fisher; 1853.

We are indebted to the Publisher for a copy of this valuable work. It is a treatise on the history, breeding and general management of foreign and domestic Fowls, and is evidently written by a person who has had much personal experience in such matters. The author has been quite successful in giving the opinions and facts of other writers in a condensed and intelligible form, in connection with his own original and important observations. Taken altogether this is unquestionably the best, and by far the cheapest publication on the subject, that has issued from the American press. It consists of upwards of 250 pages and is illustrated by more than 100 well executed cuts; indicating the characteristic features of the various breeds, &c., and is sold for the marvellously low price of Half a Dollar! We know of no better or more suitable present, which a farmer would make his wife, than Miner's Poultry Book.

#### CURRENT WINE.

A Stratford subscriber will find the following Receipt for making Currant Wine, both easy and effectual:—

Let your currants be ripe, mesh them with your hands, and to every quart of pulp had three pints of water. Mix them well together, and let them stand till they have done fermenting, then strain them through a hair-sieve, and to every gallon put four pounds of moist sugar. When the sugar is perfectly melted, put the liquor in a cask with a little dissolved isinglass. To every ten gallons, add one pint of brandy; bring it up, and let it remain one year, then bottle it.

W. R., COBBOURG.—Your communication arrived too late to receive that attention in the present number, which the enquiries it contains seems to us to require,

J. W., CARLETON.—The questions you mention, shall receive our best attention as soon as we have leisure for the purpose. The last of them would receive no simplification by a mere dogmatic answer. The present advanced state of science even, is often wretchedly inadequate to explain many natural phenomena. We must patiently wait, in the spirit of faith, on the ever operating principle of progress.

#### THE WEATHER, CROPS, AND MARKETS.

The drought still continues, only one or two showers having occurred in this neighbourhood since our last publication. Spring and root crops must inevitably prove short; although potatoes in some localities continue to look well. Early sown grain, of course, has the best chance. From all that we can learn, the Fall Wheat crop will prove above an average, but Spring Wheat must fall short. To the eastward there are some complaints of smut and weevil, but we hope nothing very serious will be actually experienced. From some of the Western States we learn that these depredations are extensive and destructive although we are inclined to think that the wheat crop over the whole of this Continent will be found abundant. In the Western section of this Province much of it is already secured in prime condition, and such is the present state of the weather that harvest operations in the more backward districts will be greatly expedited. Hay has proved an average crop, and in some places, from a scarcity of hands, the crop is not yet wholly secured. Farmers experience much difficulty, in most districts, in getting workmen even at greatly advanced wages. The same is the case with builders and other trades. The activity now pervading all branches of industry was never before paralleled in Canada. This happy state of things must no doubt be traced, in some considerable degree, to the extensive railway schemes now in actual progress,

#### TORONTO MARKETS.

FIRST LOAD OF NEW WHEAT.—Mr. Robert Northard living on lot No. 19, Etobicoke Township, on Friday last delivered the first load of new wheat which has appeared in Toronto market this season, and which was purchased by Messrs. Gooderham & Worts at six shillings and three pence per bushel. A dollar has been usually paid by this firm for many years past, or the first load, but this year prices being much above the usual prices paid, they have advanced their price to 6s 3d. It is a beautiful article of white wheat, and fit for milling. Last year the first load was delivered on July 27. New wheat has, as our readers are aware, been in the markets west of us for some days, their harvest being a little in advance of that in the neighborhood of Toronto.

Farmers in the neighbourhood of Toronto are now in the harvest field, in the midst of their golden grain. Every day of fine weather is considered a blessing, (and they have had many of them this year) which is to be taken advantage of.



Our markets are consequently not over-crowded, and prices generally rule high. The following is from "Heward's Circular," of the 23rd inst., and may be relied on:—

**FLOUR** since my last Circular has undergone considerable change. The reports of bad weather and prospects of war per 'Arabia' and 'Franklin' caused much excitement. Prices advanced here from 19s. 6d. a 22s. 6d. Several sales took place at prices ranging between these figures; and this day a speculative purchase was made of 3,000 barrels of reliable fresh ground at 22s. 5d. f.o.b.; the market for old ground now stands at 21s. 9d. f.o.b. with limited enquiry; the news per 'Europe' being somewhat unfavourable in tone. The stock of flour is light and must continue so, with the present marketable value for wheat for shipment in bulk, as mills cannot manufacture to save themselves.

**WHEAT**.—The high price, notwithstanding harvest having commenced, encourages fair deliveries, say 2,000 bushels daily, at prices from 4s. 9d. a 5s. 2d.; fair merchantable wheat by cargo would sell at 5s. f.o.b.; all accounts agree that the new crop coming in is in excellent condition and good yield. Markets thinly supplied with other descriptions of grain.

**STOCKS**.—Bank of Upper Canada—sold during the week from 10½ premium.

Bank of Montreal inactive at 24 prem.

City Bank of Montreal has been sold at 5½ prem.

Commercial Bank—sales 14 prem.; now asking 15.

In other stocks little doing.

Bank Exchange on London, England, 11; New York, 2; Montreal, ½.

#### LIVERPOOL CORN MARKET.

LIVERPOOL, Saturday, July 9, 1853.

Breadstuffs, during the early part of the week, were extremely excited, but more favorable accounts of the weather in France checked speculation. There is less firmness in prices. Wheat having declined 1d. to 2d., Flour 6d. to 9d., from the extreme point of prices two days since. White American Wheat is quoted 7s. 6d. to 8s.; red and mixed, 7s. 6d. to 7s. 6d. Western Canal Flour, 26s. 6d. a 27s.; Baltimore, Philadelphia, and Ohio, 27s. a 27s. 6d.; Sour, 22s. a 24s. Indian Corn in better request at an advancement of 6d. a 1s. White, Yellow, and Mixed, range from 31s. a 32s. Dennistoun & Co. and others quote White a 32s. a 32s. 6d. Mixed and Yellow, 31s.

Periodical applications of ashes tend to keep up the integrity of soils by supplying most, if not all, the inorganic substances.

The Oswego *Times* says that the progress of Upper Canada, especially in Railway enterprises, is almost without a precedent, and in a few years that section of the country will be one of the finest and most productive in the world.

**MOWING MACHINES**.—Mr. Thomas Tomlinson, of Oshawa, is having his grass cut this season with one of Ketchum's Mowing Machines. The *Freeman* says it costs him no more than the board of laborers would by the job, in the ordinary way of mowing with scythes. One man with a span of horses cuts from 10 to 15 acres per day.

**PRECAUTION AGAINST FIRE**.—In the course of an inquest, in London, lately, Mr. Wakley, the Coroner, observed that it would be well to acquaint the public with the fact, that if persons in a house on fire had the presence of mind to apply a damp cloth or handkerchief to their mouth and nostrils, they could effect a passage through the densest smoke; but the surest mode would be to envelope the head and face completely in the damp cloth.

**BEAUTIFUL SPECIMEN OF AMERICAN NEEDLE WORK**.—We were shown on Saturday evening, at the Hudson River Railroad station, at Thirty-first street, a specimen of needle-work, that for delicacy of shading in colors of flowers, and beauty as well as artistic skill of workmanship, we have never seen excelled, and doubt whether it will be so in the great show.—The article is a large sized table cover, crimson woolen, with centre-piece and border. It was worked by Miss Helen Hageboom, of Castleton, Rensselaer Co., N. Y., who devoted her leisure hours during two years, to produce this finished specimen of an American lady's taste and skill; a much more creditable disposition of idle time than devoting it to the perusal of "yellow-covered literature."—*New York Tribune*.

The chopping and grinding of grain to be fed to stock operates as a saving of at least 25 per cent.

**RESTITUTION**.—The Washington County *Post* says a chap in a certain village, with whom he is acquainted, having had sanded sugar sold to him, inserted in the weekly paper the following notice:—"I purchased of a grocer, in this village, a quantity of sugar, from which I obtained one pound of sand. If the rascal who cheated me will send to my address seven pounds of good sugar, (Scripture measure of restitution) I will be satisfied; if not, I will expose him." On the following day, nine seven-pound packages of sugar were left at his residence from as many different dealers, each supposing himself the person intended.

**A SINGULAR EDITORIAL ACHIEVEMENT**.—We yesterday witnessed the accomplishment of a feat at once daring and dangerous, which has created no little wonder among the fashionable residents at the hotels of our village. We allude to the Leander-like achievement of swimming the Niagara and recrossing, at a short distance below the cataract, which was performed by J. V. Thomas, Esq., the highly talented editor of the Brooklyn Daily Advertiser, a gentleman well known by his contributions to several of our most popular magazines. Having swam from the American to the Canadian side of the river, after a rest of a few minutes, he again entered the water, and succeeded in reaching the American shore. As might be supposed, the performance of such an undertaking was attended with no inconsiderable danger, and had we not really witnessed the occurrence, we should not have believed the feat could have been accomplished.—*Niagara Iris*.

**ICE A CURE FOR CHOLERA**.—J. E. Snodgrass, M.D. of New York, writing under date the 24th ult., to the *Tribune* makes the following remarks in reference to the use of ice in Cholera:—

SIR: Guided more by my personal experience, as an annual victim of that very common though very worrying and prostrating malady, Cholera Morbus, the season for which is now upon us, rather than any observation of it, of late years, during which I have had but little to do with general practice, I have come to the conclusion that the remedy for it is ice. Not "ice water," nor even ice taken into the mouth to melt and find its way into the stomach as water, but crushed ice swallowed, or Ice Pills, if you please.

The primary seat of this disease is the stomach. There the intense thirst and disagreeable bitterness, characteristic of Cholera Morbus, originate, although experienced in the mouth. There the ice should be applied, with the view to absorbing the morbid excess of caloric, or heat. Iced water, by its greater bulk, distresses the stomach, while the ice itself, applied directly to the part affected—swallowed in small lumps, not suffered to trickle down—relieves it, almost certainly.

Persons taking these Ice Pills, as I have called them, to indicate that the secret of the remedy proposed lies in the form and mode of its administration rather than in the remedy itself, which is really nothing new, are sometimes alarmed by the "shock" experienced in the stomach. This is produced by the rapid loss of morbid heat, and is therefore nothing to be alarmed at, but is favorable, to the contrary. There need be no fear. Let the ice be taken freely, and it will scarcely ever fail to give relief, without the aid of any other medicine whatever.

I am aware that advice unasked is, too usually, advice unthanked; but I feel that the above fact should be generally known, and therefore I make no apology for taking up the brief space required for its statement.

## Poetry.

### WHAT IS HOME?

BY CHARLES SWAIN:

Home's not merely four square walls,  
Though with pictures hung and gilded;  
Home is where Affection calls—  
Filled with shrines the heart hath builded!  
Home!—go watch the faithful dove,  
Sailing 'neath the heaven above us—  
Home is where there's one to love us!

Home's not merely roof and room,  
It needs something to endear it;  
Home is where the heart can bloom,  
Where there's some kind lin to cheer it!  
What is home, with none to meet?  
None to welcome, none to greet us?  
Home is sweet—and only sweet—  
When there's one we love, to meet us!

### ADVERTISEMENTS.

IMPORTANT TO  
FARMERS, AGRICULTURAL SOCIETIES, &c.

SALE OF  
THOROUGH-BRED DEVON CATTLE,  
LEICESTER SHEEP, DRAUGHT STALLIONS,  
DAIRY COWS, &c.,

AT COTTESMORE FARM, COBOURG, C.W., THE  
RESIDENCE OF JOHN MASSON.

I WILL SELL, AT AUCTION, on WEDNESDAY,  
31st AUGUST,—

- 1 Thorough-bred Devon Bull "Billy."
- 2 do. do. Cows, "Beauty" & "Daisy"  
with their Calves at their feet, Bull and Heifer.
- 2 Heifers, three years old, "Belle" and "Young  
Beauty."
- 1 Heifer, two years old, "Lady Elgin," with her  
Bull Calf at foot.
- 2 One-year old Heifers, "Princess" and "My Lady."
- 2 Bull Calves, ten months old.
- 1 Heifer Calf, nine do.

Pedigrees will be given of the above on the Day of  
Sale, and a reference to the Provincial Prize List for  
the last seven years will furnish ample evidence of  
quality.

—ALSO,—

The well known Draught Stallions, "CLYDE BRITON"  
and "COBOURG CHAMPION," winners of high Premiums,  
and proved the best stock-getters which have ever  
travelled this country.

TOGETHER WITH

The entire Stock of Horses, Cattle, Sheep, Pigs,—  
Pitt's Horse-power Thresher, Cultivators, Waggon,  
Harness, &c., &c., being a clear Dispenish Sale.

TERMS—Twelve months for all sums above £2 10s,  
without interest, on furnishing approved endorsed  
notes.

The Sale will commence at Ten o'clock A.M. pre-  
cisely.

JOHN MASSON.

E. C. HULL, Auctioneer.

Cottesmore Farm,  
Cobourg, July 23, 1853.

## IMPORTANT TO BREEDERS OF STOCK.

THE Subscriber offers for sale Two Thorough Bred  
*Short Horn DURHAM BULL CALVES*, one 20  
months old, a beautiful Roan Colour, splendid pro-  
portions, a descendant of the much celebrated "*Belted  
Will*" of England—the other about two months old,  
white, of unequalled Symetry and beauty, and is  
a descendant of "*Belted Will*," his Dam was got by  
"*Bellville*," the Champion of England, Scotland and  
Ireland, and was imported to this Province in 1851,  
and the first of Mr. Hopper's, celebrated herd, ever  
brought into Canada.

ALSO:

Two other Calves of the same unequalled breeding  
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THE  
CANADIAN AGRICULTURIST,  
AND  
Transactions  
OF THE  
BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. V.

TORONTO, SEPTEMBER, 1853.

NO. 9.

EXHIBITION OF THE ROYAL AGRICULTURAL  
SOCIETY OF ENGLAND.

The Annual Show of this important Society was held at Gloucester, on the 13th, 14th, and 15th of July, and, upon the whole, it has been pronounced by several competent authorities as equal to most of its predecessors: in Implements it was superior to any of them. As there are several particulars belonging to this great national gathering that will interest many of our readers, we propose laying before them as detailed an account as our limited space will permit, for which we are principally indebted to the elaborate and carefully prepared Report of the *Mark Lane Express*.

After considering the relative advantages and disadvantages of the site chosen for the show, and the satisfactory results which were found to obtain, the *Express* observes:

"Still the Gloucester Meeting was not without some little difficulty or so to contend against; and the worst of these came in the way of a prejudice. It had been announced some time since that the Society was at last going to act up to its original intentions, and that a show of breeding stock would become what it professed to be. Pigs that could not stand, and sheep that found a difficulty in respiration, were no longer to be considered as in the height of condition. An animal, it was judged, should have something of a constitution as well as a character; and that when he was purchased for the express purpose of improving a breed, he might be really found capable of doing so. Nothing has brought the Agricultural Society into so much ridicule, nothing has tended so much to retard that common feeling of esteem and respect it is now coming to be held in, as the systematic manner in which the procreative powers of prize animals were thus abused. The Council or Directors of the Society, though of course fully cognizant of the evil, were

long before they could gather courage sufficient to grapple with it. To the late Lord Ducie, indeed, the credit is almost entirely due of having in his official capacity unhesitatingly denounced the practice. He followed this up, too, by taking the several opinions of those practical men who had acted as judges of stock at the different meetings. These were found so far to agree with him, that a plan was submitted for disqualifying any over-fed beast from coming into competition for the prizes offered by the Society.

It is only right to say, that however well the world at large might be inclined to welcome this, the breeders themselves have thus far taken it by no means so kindly. As one gentleman stated in the *Mark Lane Express* of last week, it has been looked on by many as the very "death-warrant" of the Society. We hear that very many animals were kept at home, with the fear of this wholesome regulation before the eyes of their owners; although we believe their apprehensions must have extended the limit of the prohibition far beyond where it was actually taken. In the yard, still, there was very gratifying evidence of what this mere announcement, of itself, had effected. You came upon lively pigs; active, healthy-looking sheep; shorthorns with something of an outline; and Devons whose beautiful symmetry was allowed to develope itself fairly and honestly to the eye of the spectator. It would be wrong, however, to record the effect of this prologue as altogether general in its action. There were many old offenders yet at their old tricks of pampering; and many that, we must add, again escaped unpunished. One of the first "sights" that attracted the visitor, on entering at the bottom of the yard, was a white breeding sow, with a litter of pigs at her side, in such a hopeless state of obesity that the jury at once rejected her. With her, in the same condemned list, were associated a couple of rams, which, like the Romans of old, preferred taking their meals in a reclining position, and could by no means be induced to get upon their legs. These, though, were very rare exceptions: in fact, as we have heard, there was considerable difficulty in persuading the juries to disqualify anything; and any improvement which was observable—and there was a considerable advance in this respect—was far more attributable

to a dread of what these gentlemen *would* do than what they *did* do. Unless such duties be a little more strictly performed, the abuse will soon regain its former height, and the Royal show in July and the Smithfield show in December come again very much to the same thing—at least in appearance.

We are well aware there is some difficulty here. The grand object to attain is an animal that will fatten cheaply and quickly, and with some it may be almost impossible to show them low in flesh. Still we are inclined to regard this, as far as the Royal Agricultural Society is concerned, as rather exceptional than general. For one beast or sheep exhibited that has been kept down, how many are there fed up by almost every conceivable, and too often, as we fear, injurious means. At the meetings of the Highland Society the animals are shown in a far more becoming condition; and it is well known that prize animals from the English have been rejected almost immediately after at the Scotch meetings, from the overfed state in which they were sent. In 1843, for instance, some of Mr. Bates' shorthorns took the prizes at Liverpool, and thence went direct to Berwick-on-Tweed, where, though greatly admired, they were at once refused. What we in England had passed over, our northern friends declared was not in a fit state to regard as a breeding animal.

"We have dwelt thus long on an abuse that we feel the Royal Agricultural Society has yet to deal with. The jury system does not promise to answer; while we can only add, that if the judges will do their duty, there can be no occasion for the services of this new set of officers. We believe there are no juries in the Scotch Society."

"The Royal Agricultural Society has long been regarded as the landmark of English agriculture. It is both the index and guide to our progress. As such we may record it as never having looked or promised so well. It must number day by day more members, fuller meetings, and greater results. If, then, in our present notice, we have dwelt somewhat more on its few defects than its many virtues, it is only with the best intentions, and with the one hope that the more the former are exposed, the more likely are they to be removed. Of the general management, of the gratuitous services of those gentlemen who year after year devote their energies to the Society, it would be difficult to speak too highly. They are the farmer's friends indeed; and if he cannot appreciate them without our word, we are afraid he will be as little likely to do justice to himself as he is to them."

#### HORSES.

The prize stallion of the year was a Suffolk horse, of very great power: the heavy bulk was less than of previous years, and the general appearance much more active and muscular. The neck was rather disproportionately short, and the head large—two qualities which adhere to the horses of Suffolk. The bones of the legs were thin and flat, with large joints and broad caps, all signs of bodily vigour. The hind legs were long from the hock to the turn of the thigh, but not so

much as to form a very serious objection. The feet were large and well adapted, high rather than flat, and tapering with the proper direction of point. The color was the characteristic of the breed—chestnut, with a lighter shade in the mane and tail, and the well-known white stripe down the face, dotted betwixt the eyes, and losing the white in a point before reaching the nose. In this animal the stripe scarcely extended beyond the dot, and in that respect a small deficiency existed. The body was very compact, close, and well-ribbed, coming quite up to the character of the "Punch"—the old distinctive name of the Suffolk horses. This stallion formed much the best of many shows, and the judges could have experienced little difficulty in making the award.

The second prize went also to a Suffolk horse; and in this award similar merit must be allowed, but with more qualification. The body was deeper than that of the last animal, and the leg shorter, while there was wanting the appearance of muscular activity which is so very desirable in draught horses. On the other hand, the neck longer, and the shoulder more oblique and tapering, and the arm wider and more powerful. The color was better, being darker, and more hardy in appearance. The legs were faulty; being thick in flesh and round in the bone, capped knees, and full thorough pins. No objections could be found in the second merit in this case, owing to the heavy body and disproportionate appearance of muscular activity. The two awards could not be disputed.

The first prize of the younger stallions was also a Suffolk horse, of considerable promise as a draught animal. The color was the best of all the Suffolks that were exhibited, being a very dark chestnut over the whole body, and nearly annihilating the whiter mane and tail and the white dot in the face. We like a dark color, as denoting a hardihood which should attach to every animal of exertion. The fore-quarters of this young horse were strong and powerful, probably somewhat coarse, especially in the legs; the neck was lengthy, crest high and well arched, joining the shoulders in an elevated taper of the withers. The head was comparatively small, and the ears fine and agile—a good property in any refined organization; on the other hand, the hind parts were objectionable in the quarters, coarse joints, and the knees standing cow-legged. These last properties are rather heavy objections in horses of any kind.

The second prize for young stallions was given to a Suffolk horse of more promise than the last award. The fore-legs, shoulder, and neck were far superior to any horse of the show, being straight and clean, oblique and well arched; the head small, and finely tapered to the nose, broad betwixt the eyes, with the proper white dot. The hind parts were not quite so good, being rather long and lean in the thigh. The bones of the leg were clean and thin, and the feet hard-hoofed with lengthy pasterns. The body was uncommonly close and well ribbed, and deep and round, with proper length. The neck, though short, was finely arched from the withers to the root of the ears. The arm was very wide and powerful for a horse of two years old, and the whole symmetry



appeared to our judgment as being very far superior to any horse of the exhibition. In this opinion we were joined by the majority of the inspectors of animals.

The prize for roadster stallions went to Yorkshire, in a very handsome animal of moderate size, but most complete symmetry. The body bay in colour, with black legs, mane, and tail, were truly Yorkshire, and their properties were never better represented. The lengthy neck always attends these animals—a sure sign of muscular power and action. In this horse the neck was sufficiently long, but thick at the junction with the head, which was itself straight in the face, and hollowed downward from the eyes to the nostril. The contour was handsome, but the whole animal was too small for the special purpose, and too slender in the bone. We fear to put our opinion in opposition to the judges; but our conclusion is in this case supported by many very eminent inspectors.

The prize for stallion ponies rested near Bristol with a roan-coloured pony with a cream-coloured mane and tail. The fore and hind feet being white above the fetlock halfway up to the knee, appeared to us to be too gaudy, when joined with a white face from the ears over the nose. But uniformity of colour is not to be expected in those mountain breeds of animals where the sexual intercourse is altogether unrestricted, and the animals copulate at random. The animal here shown was not a pure Welsh horse, but showed a mixture with some lowland animal of a small kind. The general symmetry was not of the character of Welsh ponies, the best of which are the most handsome of all horses in miniature.

The winner of the prize for mares and foals went to a heavy animal, with a width and depth of carcass almost unequalled. The head was large and heavy, with much white on the face, shoulder low and thick, barrel deep and flat, the legs round and groggy. The neck was short and flat, and low in the withers. The short rib very flat, and the hocks very flatly rounded. Having agreed with the judges in every award of the horses, our opinion differs on such forms as this animal being selected for breeding, as perpetuating the long exploded heavy carcasses for the purpose of quick and active muscular exertion. This case bears most directly upon the point—the head of the mare was half as large again as one of the proper symmetry. The girth was also lean, which shows a want of room for the necessary bulk of lungs, and their consequent action.

The Suffolk mare of Prize 2 showed a symmetrical form, very far superior to the last-mentioned animal of the first prize. The stretching length of body pleased us much, as denoting a muscular activity, and joined with a lengthy neck constitutes a good form of the draught horse. The head was large, the jawbone being broad and rather deformed. The shoulder was not of great depth, nor was the neck well crested; but all other parts were unexceptionable, and our award would reverse that of the judges, and give this mare the first prize, and that on the score of general merits.

The prize for mare ponies was joined with that of stallion ponies, the winner being a thorough

black mare, showing little or no Welsh blood. Both prizes have been produced by lowland mixtures, and did not at all represent the merits of the Welsh animals of the hills. But the judgment may not have been restricted to the special breed, though it would have much pleased the Welsh mountaineers to have been so.

The first prize of two-year old fillies rested with a Suffolk of no great merit; certainly a most faulty award to a very short neck, a head as long as the neck, flat ribs, and very hairy legs. But the animal showed much power in a lengthy carcass, high shoulders, and great strength of leg in bone, if not of muscle. The shoulder and seat of the collar were almost upright, and totally deficient in the oblique taper to the withers. This short statement quite suffices for such an animal.

The second prize was given to an animal of very similar merits, neither of them possessing scarcely any two points of excellence. The colour of this second filly was good, viz., a bay coloured body with black legs, which when well defined constitutes the most handsome and fashionable of any colour of horses. Here the bay was light and sandy, and wanted the blood-redness; and the black of the legs was mixed with whitish hairs, which spoiled the character. The neck was uncommonly short, and the head as long as that part of the body. The wither was higher than in the first prize, but the shoulder was equally heavy, and the carcass lumbering. These two specimens were the worst in the show of prize horses.

The Suffolk stallions far surpassed the animals of former shows, being lighter in the carcass, more lengthy in the body, longer in the neck, more sprightly in their appearance. The superiority to their other exhibitions could not be disputed, and the general merit of the horses has obtained a very large confirmation. A smaller head and cleaner legs are much to be desired, even in the opinion of the owners themselves; and along with a larger neck and a lighter belly, would go far to establish a breed of horses unequalled in Britain. The foundation is good on which to build, and the beginning has been made in a very considerable advancement beyond the former exhibitions. The uniform colour forms a large commendation, and also the general form of body.

With some two or three exceptions, the unsuccessful exhibition of stallions formed a group of animals of a very mediocre description, almost beyond any show that comes to our recollection. Heavy, lumbering carcasses, thick legs, stiffly upright, with a largely intermixed variety of colours, showed the very different opinions entertained on this point; and much prejudice, conceit, and ignorance must have concurred with the owners of the horses, ere the inducement was obtained to submit to the public gaze such unpolished specimens of the horse—by far the noblest animal that treads the earth. Our own opinion is never able to depart from muscular power and action for the purposes of exertion; no short, heavy fat carcass, like a pig, ever could obtain our approbation for a draught horse. The phrase of “throwing weight into the collar” has been heard from the veterinary school of anatomy; but weight must

be put into action by some motive power, and such a strength as is able to support the required exertion. This power in the horse is muscle, with bone, which it is able to lift with ease and freedom as a lever; with the flesh, or muscle, sufficient to fulfil its purpose of connecting the different parts of the body, and hold them together; but not in an abundance, to form a load for the muscular power. Such are our ideas, which are always freely expressed on every proper occasion. We think general opinion is now tending this way; it has long thus prevailed all over North Britain, where horses are more usefully adapted for active purposes. Our pleasure was very considerable to see the Suffolk horses improved in this respect; and, with the foundation that exists, something like perfection may be expected.

#### SHORTHORNS.

The shorthorn bull of this year was the property of Lord Berners, of Leicestershire; one of the new winners in this department. The animal was coloured in a strawberry roan, with large white spots; and possessed a very superior merit—at least in the show of this year. The head was rather large on the side view, but in front the width betwixt the eyes was very becoming, and the muzzle well tapered. The shoulder was rather narrow on the top, with a rise on the commencement of the back; the flat top width betwixt the hock bones was very superior, and the root of the tale was well set, though rather high. The thighs were deep and wide, as is usual with the shorthorn breed, and fleshy nearly to the hock. The flank was hollow and lean where joining the hind leg, and the short ribs were widely home. The animal was very respectable though only a second-rate bull of that celebrated breed where the foremost specimens appear. The horn and tail showed a hardy constitution, these extreme parts denoting a proper degree of refinement of organization as much as any others. This animal was purchased at a long figure by Messrs. James Ganley and Sons, of Usher Quay, Dublin, for the Hon. Mr. Harmon, of the County of Longford, Ireland.

The second shorthorn prize, which took the first at the late Plymouth meeting, was a less animal than the first, and with nearly equal qualities. The colour was lighter with more white in the roan. The head was faulty in a protuberant face, which is as objectionable as the concave formation. A large hollow appeared behind the shoulder, which makes a lean girth, as often happens with that breed. The inferiority was most evident by the first prize, and no mistake could be perceived in the judgment awarded.

The first prize of Class 2 went to a purely white animal of most regular symmetry of carcase, but a head much deformed by a protuberant face, and a high osseous cap of the forehead. The horns were long and irregularly set, one being lower than the other; the ear long and agile, and the eye quick. The posterior width showed well, and the touch of the skin felt very soft and gelatinous. The back was straight, and flat to a nicety; the top of the shoulder round and well covered. White animals may be delicate in con-

stitution, but the skin is generally fine and the touch silky. With the exception of the head, this animal was not equalled in the show yard.

The second prize was won by a young bull of a beautiful strawberry-roan colour, and the most exquisite symmetry. Accident had broken off one horn, but that pendicle in the one remaining showed a clean growth and a proper bulk, which always denotes a vigour of constitution. This animal showed properties of a very superior degree, and, along with the first prize of this class, very much excelled the two prizes of Class 1.

The first prize cow was a very superior specimen of the breed, and equal to any animal that has ever appeared at the shows of the Society. The horns were not handsome, being confined close to the head downwards; but the thin neck showed a milker, and the body the fattening properties. The width of the hock bones was very rare.

The second prize well supported the reputation of Mr. Booth. The cow-like head, horn, and neck, have probably never been surpassed, along with a carcase that exhibited every propensity for the butcher. There is a probability that the latter purpose is more answered than the dairy in both these specimens, but in general merit they are unrivalled.

The two prizes for heifers went to Mr. Booth, who showed two animals perhaps never surpassed by any beasts of the kind. It would be difficult to distinguish any difference in the respective merits, except that the first prize, being lower on the leg, showed more width and a greater weight of carcase for its height. The second would please the dairy farmer, and the first the grazier and butcher.

The first prize of yearling heifers lighted upon a very handsome animal, nearly white in colour, with roan in the fore-quarters. This beast formed one of the best specimens of the show, possessing every quality that could be wished at its early age; the head being very cow-like, and the body straight, cylindrical, deep, and wide.

The winner of the second prize was wholly white in colour, with much symmetry of carcase and general appearance. These two animals fully upheld the character of their breed.

With the exception of Mr. Booth's animals, the Shorthorn cattle were shown with an inferiority, though with some fair specimens among the unsuccessful competitors. An over-refinement may attend Mr. Booth's beasts, which may be pushed beyond fecundity and the milking property; but they have always been famous for carrying much flesh on a small quantity of bone. The show of this year has been largely indebted to him; as well as to Mr. H. Smith, who exhibited a very neat animal of Sir Charles Tempest's herd, she had most of the points distinguishing a well-bred shorthorn, and deservedly took the first prize for cows.

The bull of the foremost prize was an animal of much merit, and quite equal to the first place of a second-rate quality. The stature was low, with a broad compact body, showing much hardihood with a sprightly appearance of activity. These properties go far to compensate the wants of the very superior qualities.



## THE HEREFORD

Cattle were represented in the first prize by a bull of Lord Berwick's, who is known as a winner of fat cattle. The present case showed an animal of very superior merit—probably the best beast in the show-yard. The variety was the New Hereford with white face, legs, and belly, with the top of the shoulder and the end of the tail. The width and depth of carcase, with the length of body, were very superior, and the animal showed an activity that does not always attend such heavy carcasses. No more superior animal of the breed has ever come under our notice. The shoulder was uncommonly well covered, which produces a uniformity of shape along the whole frame. It is a point of great importance, and the Hereford beasts excel in it. A sloping shoulder joining the neck and ribs, admits the covering of flesh, and removes the heavy objection of bare bones. The present animal was well provided in this point.

The second prize went to a smaller animal, which showed a very general symmetry of form, but in no very peculiar points. But the justice of the award could not be challenged.

The first prize of Class 2 went to a small animal, but of a very great merit. The general symmetry was probably superior to the others mentioned.

The second prize was won by an animal of similar merit with the above, with a horn perhaps too large for the body. The head was unusually handsome.

The Cows showed uncommonly well, especially in the first prize, which has been seldom equalled. The fattened condition might be objected to in a lean animal. The other prizes of this breed were equally distinguished.

The Hereford cattle were largely and richly exhibited at this show; the contiguity of the native county to the place of exhibition favoured the convenience of transit, and it was extensively used. No superior animal to the bull of the foremost prize has ever been presented to our view, and we believe general opinion supported our judgment on that point. The palm of merit between the Hereford and shorthorn cattle may never be settled: but the former are superior in the forequarter, or in the shoulder and first ribs. The slanting shoulder slopes into the neck and ribs, and has not the bony projection of the shorthorn, producing much bare bone, and a great weight of useless formations. This superiority cannot be, and, we believe, is not generally, disputed: the shorthorns show a heavy coarseness in the forequarter, with much leathery skin from the shoulder and neck. The very best breeders have not been able to banish this property from their herds, along with a lean girth joining the shoulder and first ribs. Eight out of ten shorthorn bulls inherit this defect. On the other side, no animals of any kind exhibit such an ample development of the hind quarter,—the deep and fleshy thigh, wide twist, and length of cut in the rump. This superiority advances to the forepart of the middle ribs, and there ceases, and other animals take the lead. This superiority was never more conspicuous than in the Hereford first prize bull of this year.

The Devon cattle excelled in two bulls, which well supported the reputation of the breeders. The first prize was the smaller beast, but probably unequalled even in the symmetry of the handsomest of all breeds of British cattle. The straight carcase from the shoulder to the rump, along the back and both sides, formed a point of pre-eminence not at all equalled in the show-yard, and probably never surpassed by animals of the Devon breed. No cattle in Britain exhibit the same squareness of carcase as the Devon; especially along the sides, from the point of the shoulder to the extremity of the mid-thigh. This breed, and the Hereford, lose the posterior width behind the hook-bones, which the short-horns maintain, and even expand; but in the forequarters, in the covered shoulder, and fullness of girth, the Devon probably exceeds the Hereford—at least the equality is fully supported. If the Devon were one quarter heavier, and the horn reduced in one-half the length, the appearance in worth might be improved, although not very materially advanced. As with the Suffolk horses, the uniformity of colour much recommends the Devon cattle; the character is throughout equally uniform, and the symmetry is unequalled by any cattle in Britain; and the general and most entire character has never been more fully upheld than by the two bulls now mentioned.

The protuberant buttock of the Devon and Hereford beasts forms a defect in comparison with the upright standing of the shorthorn, confirming the former observations on the respective merits of the different breeds.

The cows and heifers of the Devon breed at this show supported the usual character—small in appearance, but capable of yielding a larger progeny than is indicated by the size of carcase. The yearling heifers of this show were most exquisitely handsome.

## WELSH CATTLE

appeared in fair specimens of the mixed Pembroke colour, the mountain dingy black, and the lowland white, but no peculiar merit was shown by any of them.

## SHEEP.

were chiefly exhibited by Messrs. Sanday and Webb; the latter so well known among Down sheep breeders, and the former gentleman for producing the finest specimens of the small variety of Leicester sheep, with the wool of curly pile. The fore flank, in the very large fullness, is most remarkable in these sheep, with the fineness of bone and compactness of carcase; but a delicacy is apparent, though the great merit is undeniable. The head scarcely tapers in a corresponding fineness with the body. The bare top of the head in wool and skin shows the overwrought refinement of the animal. The prize ewes were of the same description, being small in our opinion both in flesh and wool.

The excellence of the Down sheep in Messrs. Webb and Rigden's needs no commendation. The ewes of Mr. Lugar showed a strong advance to rivalry.

## LONG-WOOLLED SHEEP

were numerously exhibited, the show being placed in the native country of these animals.

Judges allowed great merit to them, and certainly they were superior to any former show.

#### SPECIAL PRIZES

were very well won by Mr. Foster, who also received commendation for his Shropshire Down sheep. The larger specimen seemed a most useful animal for breeding and fattening.

The Messrs. Ganley, of Dublin, whom we stated elsewhere purchased Lord Bernard's shorthorned bull, also purchased several of the first class short and long-woolled rams for noblemen and gentlemen in Ireland.

#### PIGS

were well represented in the large breeds, and exhibited much merit. The two prize boars of this class were superior to any recollection of the animals at former shows, being long in the carcass, of proper length of leg, and activity of body. The large boars and sows were white in colour, while the prizes of the small breeds went to black animals, the white pigs of the small breed being few in number and in merit. The white colour may be preferable in pigs, as the flesh is dressed for use with the skin unremoved, and a whiteness is more agreeable on the table than blackness of any kind. The swine of the small breeds have never been better exhibited than in the show of this year. A new breed might be produced with advantage in the midway between the large and small breeds that now exist, and one to serve both purposes of bacon and fresh pork, according to age and time of being used.

#### THE POULTRY

formed a very great attraction to the visitors of the yard. The Dorking fowls were numerous, and splendid in the quality, as was the unanimous opinion of every inspector. Two tiers of cages, extending along the whole side of the enclosed yard, very deservedly engaged much attention. It may be difficult, probably impossible, to foretell the result of the acclimation in Britain of the Cochins fowls; but to judge from appearances, when placed alongside the Dorking poultry, the competition will meet with a strong contention, as present judgment would decide for the Dorkings. The second prize of these fowls showed a most splendid specimen of the breed.

The game fowls in the red and white varieties were well exhibited. The proud strut, majestic mien, and piercing eye of these cock birds are very attractive and pleasing to behold, and in some respects are superior to the Dorking—more prolific in eggs and chickens, though less in bulk of flesh.

#### THE POLAND FOWLS

were well shown, with the black body, and white crown over the head. The general character does not reach the two former breeds; nor do the Malays nor Hamburg fowls.

#### TURKEYS

were splendid—specimens from Lord Hill and Mr. Fairlie. We have never seen that forest tenant of the western world so richly covered with silvery feathers, or so proud in the majestic strut, as in the prize specimens of the above-mentioned nobleman. They were much and justly admired.

#### DUCKS

purely white in colour, were in a beautiful specimen of Mr. M. Rowe, Devonshire. Their long square body and tapering bill showed them to be of very superior appearance. A second prize was given them. The progeny may reach the first place in future exhibitions.

#### GEESE

were numerous, and superior in quality. Our preference was given to the third prize, being wholly white in colour. They suited our notions, that as the flesh is prepared with the skin unremoved, the white colour is the most pleasing, as just mentioned in the case of black and white swine. It may infer a delicacy of constitution as with white horses and cattle; but the defect, if any, is not much felt, and the purposes are different. Our ideas may be unfounded partially on this point, but the justness has been admitted.

#### IMPLEMENTS.

The Agricultural Implements and Machinery were more numerous than on any previous occasion, and although there does not appear to have been many striking novelties, yet there were a few; and several of the old and best reputed implements had evidently undergone valuable improvements and adaptations to an advancing system of cultivation. When the report of the Judges shall reach us, particularly the results of such implements and machines as were reserved for further trial, we may notice somewhat in detail the construction and uses of several, especially such as seem suited to the wants of this country.

The following were selected for a further trial during harvest:—

Bell's Reaper.—W. Crosskill.

M'Cormick's Reaper.—Burgess and Key.

Hussey's Improved Reaper.—Dray and Co.

Hussey's Improved Reaper.—Garrett and Son.

Hussey's Reaper.—O. Hussey.

M'Cormick's Reaper.—B. Samuelson.

Of these it will be recollected that the reaper exhibited by Mr. Obed Hussey, the inventor of the machine known by his name, is one. But, as soon as the selection of the Council was published, Messrs. Dray and Co. sent in a protest, in which they call attention to the thirty-eighth article of the Society's regulations, and state that by an agreement entered into by them with Mr. Hussey, that gentleman sold to them the sole and exclusive right of manufacturing and vending certain improvements in the reaping machine of which he was the inventor, and agreed to do all in his power to promote Messrs. Dray's interest in its sale, and not to licence or authorize any other person to make or sell the same, or any improvement thereof. On these grounds Messrs. Dray protest against the machine exhibited by Mr. Hussey "being allowed to obtain the sanction of the association." The effect of this protest will



be, in case the reaper of Mr. Hussey has the prize awarded to it, that the Council will withhold the prize for three months, in order that the parties may have an opportunity in the interval of settling the question of infringement of right in a court of law.

The vast increase in the entries which goes on yearly may be seen by the following tabular statement:—

Year of Meetings.	Locality.	Entries of Implements.
1839.	Oxford .....	23
1840.	Cambridge ....	36
1841.	Liverpool.....	312
1842.	Bristol .....	415
1843.	Derby .....	508
1844.	Southampton ..	948
1845.	Shrewsbury.....	942
1846.	Newcastle ....	735
1847.	Northampton ..	1321
1848.	York .....	1508
1849.	Norwich .....	1882
1850.	Exeter .....	1223
1851.	Windsor .....	No exhib. of Imple.
1852.	Lewes .....	1897
1853.	Gloucester ....	2032

#### THE DINNER IN THE PAVILION.

On Wednesday, July 13th, the annual dinner of the members of the Society took place in the now well-known Pavilion which does duty yearly at these popular festivals, and which was erected for the occasion in the beautiful grounds immediately adjacent to the Spa Gardens. Upwards of 800 gentlemen were present, the chair being filled by the President of the Society, Lord Ashburton.

We gladly make room for such portions of the many excellent speeches, as will more particularly interest our readers on this side of the Atlantic. The noble President thus introduced the toast to the American Minister:—

The CHAIRMAN said, I now call upon you to fulfil the pleasing duties of hospitality. I call upon you to drink the health of the Minister of a state, foreign from us indeed in name and in policy, but connected with us by the dearest ties of blood and of sympathy (loud cheers). That gentleman has not thought it unworthy of his high station to come amongst us and join in the celebration of this our festival. We thank him for his presence. We accept it as a token of his regard, and of the regard also of the people whom he represents—a regard which we value above that of any other nation that inhabits the globe (great cheering). I give you “The Health of Mr. Ingersoll, the Minister of the United States,” and I beg you will tender him a right English welcome.

The toast was drunk amidst enthusiastic and protracted cheers, which were renewed with increased vehemence when the hon. gentleman rose to return thanks.

Mr. INGERSOLL acknowledged the compliment in suitable terms, alluded in a very happy manner to the beneficial results of important negotiations that had been conducted between Great Britain and the United States, and the mutual relations of these two great powers observed. “Agriculture is not only the most ancient, but the most honourable and the most useful employment of our race (cheers). Agriculture in many of its productions is especially the bond of union between your country and mine [renewed cheers] A portion of the agricultural productions of America—perhaps one of the heaviest and largest productions that go abroad—cotton, is, if I may use the phrase, without anything like an error in point of figure of rhetoric, the daily bread of the manufacturers of Great Britain [Hear, hear.] We send you at this moment millions of bales of cotton, which go to your manufacturers, who return that cotton in a new shape to our country, to clothe us to a very great extent, as it has clothed and prospered you. Perhaps it would not be going too far to ascribe in part the present prosperity of England, and certainly that part of it which is engaged in manufactures, to the employment that is given in your manufacturing towns by the cotton of the United States; and may rely upon it, that if you desire more—if your appetite should grow with that it feeds upon, we shall continue to produce more and more, in order to supply your desires, and still go on to cultivate the friendship that such an intercourse is calculated to promote [Hear, hear.] In passing, I may remark that there is no great danger, at least for a century or two to come, of a too-large demand for this article on your part; and I trust there is no danger of a diminution in the supply on ours, notwithstanding that cotton is produced in Egypt, in India, and, in fact, I believe, in Western Africa [Hear, hear]. I have lately received intelligence from Alexandria that the export of cotton last year from Egypt amounted to 500,000 bales—an immense amount truly; but the quantity grown annually in America is about 3,000,000 of bales at this moment; and it is computed that by the year 1860 another 1,000,000 of bales will be added to that—thus making the total produce amount to 4,000,000 of bales. It is said, however, that in Egypt the cotton-growing land is already occupied, and that the land of the Pharaohs and the Ptolemies will not interfere with the lands of the Washingtons in the production of the cotton which is required by this country [cheers]. But let me add that we have various other commodities, besides this leading one of cotton, which we are happy to share with you, and by means of which we may cultivate those feelings of interest that are so closely allied to the feelings of friendship, and sometimes lie at the very root of them. There is an agricultural production, perhaps not so useful as cotton, yet abundantly used in this country as well as ours—a commodity which contributes to fill your warehouses, and notwithstanding late arrangements which have been much rejoiced at throughout the country, contributing also to fill your exchequer—I mean tobacco—[Hear, hear, and laughter]. Tobacco is a commodity that we grow to the extent of 200 millions of pounds per annum. I

know not to what extent you take it; but I do not believe it to be an article that is exactly food or raiment [Hear, and laughter]. Again, whenever a wet season or an unpropitious moment of any kind renders it desirable that you should call upon us for our edibles, we will promise to cultivate them to any extent that you may desire [cheers]. Rice, which is an article of food to one-third of the whole human family, is produced amongst us to the extent of 200,000,000 lbs. annually. Wheat we produce to the extent of 100,000,000 bushels. And, above all, there is an edible which has not been much introduced among you here, but which your sister kingdom of Ireland, during the famine of 1848, received largely from us—I mean maize, or Indian corn, which is produced among us to the extent of 600,000,000 bushels annually [cheers]. Do not suppose that I indulge in vain boastings when thus talking of the hundreds and thousands of millions of bushels and pounds which we produce of these articles. With the vast extent of territory, and the variety of soil and climate which we possess where everything convenient for the use of man is found in one place if not in another. Nature would cry “shame” upon her sons if we did not produce largely [cheers]. It has been computed, I believe, that there are about 46,000,000 acres of land in England and Wales; but there are in the United States, of public lands which belong to the government, ready for sale and appropriation at the smallest possible price to individuals who may be willing to take them, not less than 1,370,000,000 of acres. And I would say to this great company, that if it should at any time happen that your crops are not abundant, or that the prediction of a distinguished political philosopher 150 years ago, Joshua Gee, should in any respect be verified, that England could not contain ten millions of inhabitants—she having now long since doubled that amount—if, I say, you should ever find your population pressing upon the soil, then in great humility of spirit, but with the most hospitable feeling, I invite you to come over to us, and to stay with us as long as you please: you shall be received with a hearty welcome [loud cheers and laughter]. Observe, this is a move which has already, in some degree, been looked upon with a favourable eye. I believe it is estimated that there are now on the soil of the United States upwards of a million of friends from Ireland, and a quarter of a million of friends from England, settled and resident there. And recollect that our constitution and laws are such—I throw it out for the information of those who are not aware of the fact—that every individual who chooses to come amongst us, whose conduct and whose character are untainted, may attain nearly every political distinction, and certainly attain every social right [cheers]. But it is not alone on account of its direct effects that I have thus briefly called your attention to the importance of agriculture; it is also the great source of the extensive shipping that carries on the commerce of the world. These immense store-houses which float over the ocean in all its parts are either the produce of our primeval forests, or the results of those forests when cultivated by the science of agriculture. And now that we see

them bridging the ocean, as it were, between your country and ours, rendering the voyage so short that no one thinks it worth while to hesitate in the performance of it, and so agreeable that everybody must enjoy it, we should not forget that for all this we are originally indebted to agriculture (cheers). One word more as to my country. There, where such an abundance of soil is to be found, science has also in a degree been introduced into agriculture, and, though not to the extent it prevails among you, yet with us too the pursuit of it amounts to a passion, and by far the largest part of our population are engaged in it. In that country, and with that population, we shall be delighted at all times, as heretofore, to emulate the science and the art of the country by whose citizens I am at this moment surrounded—a country which stands at the head of the agriculture of the world (cheers). I beg to give you as a toast “The Royal Agricultural Society of England” (protracted cheering, followed by three times three).

SIR RODERICK MURCHISON, the eminent Geologist, said that a toast had been entrusted to him, to propose which required the powers of an Atlas to do justice to it. It was “The Agricultural Societies throughout the World” (cheers and laughter). And he saw by the list of toasts that he was honoured with a title which he did not know he possessed before. He was described there as K.S.A., which he presumed must mean Knight of the Society of Agriculture (laughter)—and that, therefore, upon this most remarkable occasion, he was to stand forward and be their knight-errant (renewed laughter and cheers). The task was doubtless a very onerous one for a plain man of science like himself to perform. But for a long period of his life he had had the satisfaction of being connected with many societies which had for their object the diffusion of science, and among others he had taken an active part in the British Association for the Advancement of Science, out of which this glorious Agricultural Association had taken its origin. On the foundation of that society this was established, and the principles which that Association could only carry out on a comparatively limited scale, amongst a few men of science this had carried out amongst thousands of men, and diffused its beneficent influence over the world. The day was far gone by when it was necessary for any Dominic Sampson of geology, or any itinerant geologist, to go about informing the agriculturists of England of the intimate connection which existed between the soil which they cultivated, and the sub-soil or rocks with which he (Sir R. Murchison) dealt. They had in their body men quite capable of showing them the foundation upon which the whole thing stood; and here he must beg the noble President to observe that he had omitted the foundation on which all agriculture rested, the rocks, the geology of their science. He was delighted to see, however, that in the volumes which were published by the society, the first article of their creed in every article was the geological structure of the country, and next followed the agricultural division, and everything of course which rested upon their rocks (hear, hear). The spread of agricultural societies founded upon the principles of their own had gone on, on the other side of the Atlantic, as they had heard from the Minister of the United States, and not only in that vast country, but in other portions of the American continent which had representatives sitting close to him. He had upon his right hand the Vice-



President of the Republic of Mexico, General Arista (cheers). And he would tell them that he had learned from a conversation with his Excellency, that he was the first person in the Republic of Mexico who had founded an agricultural society upon the same principle as their own. In that land General Arista offered temptations to emigrants almost greater than those which the American Minister had pointed out to them; for he had told him (Sir R. Murchison) that the fee-simple of the most exuberant land in Mexico was to be bought at three halfpence an acre (a laugh). He might also tell them that General Arista was not a man of mere words, but a man of deeds also, for he was the first person who, in the show yard that day, had bought one of the finest of their new inventions, which he was going to take back with him to his own land. He should ask General Arista to say something in reply to the toast, but he did not speak the language of this country. He had on his right hand, however, another representative of a true Englishman (loud and prolonged cheering.) He saw by their cheers that they were all very well acquainted with Sam Slick (laughter and renewed cheering.) He felt that he (Sir R. Murchison) had already spoken too long (No, no)—at all events that “good wine required no bush.” They would allow him, however, to say that in addition to Sam Slick, there were other works of the gentleman to whom he had alluded, which were imbued with the highest tone of morality, and calculated to improve the social condition of man more than perhaps any other books, and among these was the last work which this eminent man had written, entitled, “Wise Saws and Modern Instances” (cheers and a laugh). As throughout his life this man had taught them so many “wise saws” which they had implanted in their hearts, so he hoped they would allow him (Sir R. Murchison) to point him out as the best “modern instance” and exemplification in his own person of the principles which he had so ably advocated, and was still advocating (cheers). He would therefore conclude by proposing the toast respecting the agricultural societies in all corners of the world, coupling with it “The health of the Hon. John Haliburton, the author of ‘Sam Slick,’ and of Wise Saws and Modern Instances” (cheers).

The toast having been suitably honoured, JUDGE HALIBURTON, on rising to respond to the toast, was greeted with renewed applause, which lasted for some minutes. He said he felt quite overpowered at the manner in which his name had been received, and which was so unexpected that it had taken away from him the ability to express himself in the manner that his accustomed calmness would have enabled him to have done. (A laugh). It was a parliamentary custom—he appealed to his noble friend the chairman to support his assertion—to give some “notice of motion.”—(a laugh)—and if he had had that notice on the present occasion, it was possible that he might have been prepared to be a little more calm than now, though perhaps he should not have made so natural a speech. (A laugh). He had to thank his friend on his left for the very handsome manner in which he had been pleased to bring forward his name, and he was the more gratified that it had fallen to his share to do so, because *Gaudeo laudari, a te laudato viro*. (Cheers). He believed if there was a man who had promoted the welfare of the farmers of this country, it was their scientific friend, who had done him the honor of proposing his name to them. (Cheers). He was the man who, with marvellous forethought and foreknowledge, had predicted the gold of Australia. He was the man who had sent

out thousands and thousands of their superfluous population to dig that gold, whilst the British farmer had to feed them. (Hear). Politicians claimed to themselves the merit of all the present high prices for home produce, but factitious causes had really led to those high prices. (Hear, hear). Certainly, politics were not the bread of life. (A laugh). During the war, when the high prices raised up the farmers of this country, it was because the unproductive classes existed in such numbers; it was because the army and navy, and people in the public employments, had to be fed. And now, one quarter of the whole population of this country was either afloat on the water or digging at the diggings, and as they had to be fed, the unproductive class had again increased, though from an entirely different cause. and thus prices had increased. Therefore, he said, don't let the politicians take the whole credit of it to themselves. (Cheers). He had also to thank them for the honor they had done him in naming some of his books—books that he never could have written unless he had spent his whole life in the country—unless it were that he had never lived in towns, but among his countrymen the farmers. He loved the farmers—(Hear)—from the opulent farmers (and it took very little to make a man opulent in a poor country) down to the occupier of the log hut—and the happiest days, or rather hours, of his life he had spent in their society. It was by talking to these people, and by knowing their feelings and prejudices—for they, too, had their prejudices like other people—it was from knowing them intimately that he had acquired some little insight into that human nature which they had done him the honour of saying he had put in his books. (Cheers.) He liked the farmers; and why? Because “God made the country, and man made the town.” (Cheers.) Agriculture was the most simple, the most natural, the most ancient, and the most honourable employment of man; and although he could not say that he had contributed anything to the exhibition in the show-yard, in the shape of a model or anything of that kind, yet a little wooden clock he had exhibited to his own countrymen, together with some moral lessons, which he hoped had done them some good. (Cheers.) One thing he must say, that he should be a most ungrateful man, and as vain and conceited as ungrateful, if he did not say that he was proud that his lessons had been read and approved by the farmers of England as well as by those of his own country. (Cheers.) One of the moral lessons that had come from that simple instrument the wooden clock, was the teaching of the farmers of his country the value of time, which they were all too apt to forget: it taught him the hours of work and of recreation, and how to get an extra hour for an extra dollar if he wanted it. But, like the human machine, it had one great defect which ought not to be copied—it “went on tick.” (Roars of laughter.) He had not the honour to be an Englishman, but was a native of a distant part of the world. A hundred and fifty years had now elapsed since his forefathers left this country. Whether they slipped off at the assizes (loud laughter, in which the learned judge heartily joined)—whether they slipped off at the assizes, or were sent out by one of his own cloth at the public expense, there was nobody now old enough to say, (renewed laughter,) and therefore it would be perhaps as well that they should not make too strict an enquiry into that matter. (Laughter.) It was a long exile, though. (Renewed laughter.) His excellent friend the American Minister had talked about that country being ready to receive the surplus population of England; but he (Judge Haliburton) should like to emigrate back to England again. (Laughter.) It would be his delight and his happiness to return to England; and he was not sure, that if one of his learned brethren would trans-

port him there, that he would not commit some crime, provided there was no moral guilt attached to it. (Laughter.) But, turning to the object which had led to their assembling there that day, he assured them that he had never spent two such delightful days in his life as that and the previous one, which he had devoted to the witnessing of their exhibition (applause). As a practical farmer himself—one who had engaged in, and was fond of, the cultivation of the soil—he had come from the north, from Scotland, for the purpose of being present at the exhibition to witness the improvements that had taken place in agriculture during the last ten years. He had observed everywhere, and it gave him great pleasure that without the least flattery he could say so, that within the last ten years since he was last in this country, such an improvement had taken place as was beyond everything that could be conceived (cheers). The improvement in that class to which Lord Harrowby had referred—the lower orders—had been greater than in any other class, for they were better fed, better clothed, better paid, and respected themselves (cheers). As a traveller, perhaps they would permit him to mention an instance of this improvement. He saw in St. James's Park the other day a notice—"The public are requested to protect the gardens and trees in this place" (Hear). No notice of man-traps and spring-guns, or of prosecutions (cheers). That one fact spoke volumes. He was at Loughborough last week, and on examining some public grounds he saw a similar notice—"These grounds are for the benefit of the public, and the public are requested to protect them"—That, too, was an evidence that the working classes respected themselves, and that they were worthy of the respect of their superiors; and it was a most gratifying fact that it was so (cheers). And when he looked at those implements at the exhibition, and at the state of the working classes at the present time, he saw that there was now no fear of any prejudices being awakened in the minds of the labourer against the use of machinery on account of its depriving him of his bread. That day was gone by, and they might thank God for it (applause). They might also thank God for another thing, and that was that the day of the demagogues was gone by (cheers). His occupation was gone (cheers), for he had now no idle, lazy, or pauperised population to talk to and excite, and therefore he could do no mischief (renewed cheers).—Having shown how the use of improved machinery, in the cultivation of the land, rendered necessary the employment of increased labourers, and expressed his belief that the grain-cutting machines would yet be rendered available, the learned judge expressed his warm approbation of the automaton reaping-machine, which he considered did honour to those who had invented it and brought it forward, and concluded amidst great cheering, by again thanking the assembly for the honour they had done him.

#### THE ABRAHAM TUP SHOW.

The annual letting of Mr. Jonas Webb's celebrated tups took place on Wednesday July 6th, Mr. King officiating as auctioneer. The attendance was about as large as usual. The animals met with unqualified admiration; and one hired by Mr. Roche, an American, fetched the astonishing price of 130 guineas, being the highest figure yet obtained by any single tup since Mr. Webb has commenced as breeder. There were 71 sheep let, which netted £1,580, being an average of £22 4s. Previous to the letting every animal has a reserved bid fixed upon

it, by Mr. Webb himself, and it is but justice to that gentleman to say that every tup put up realized more than the price put upon it. Indeed, the aggregate produced £500 more than the reserve; one instance we might name, of a ram being fixed at £5 5s fetching £18.

#### THE DINNER.

The usual tent was erected for the dinner. Substantials and delicacies were beautifully laid out, the tables being decorated with a profusion of flowers and evergreens, as well as the capacious tent itself, presenting a sight of surpassing excellence. This annual festivity draws together 200 gentlemen; it is graced by the presence of nobility, clergy, yeomanry, landlords, tenant farmers, professional gentlemen, and tradesmen; and, by a judicious arrangement of the worthy and hospitable host, political subjects are carefully eschewed, so that not a remote chance should exist to jeopardise or mar the spirit, good feeling, and conviviality of the day. Many eminent agriculturists who were present at the letting were obliged to content themselves with hiring some of the best tups, circumstances not permitting them to stay to dinner, to which about 200 gentlemen sat down, under the able presidency of the Earl of Hardwicke.

Among many excellent observations of the Noble Chairman, we select the following:—These annual meetings were of a peculiar character; even this day a gentleman had come over to this country from the United States, on purpose to purchase at the sale, from the most important country on the face of the earth, connected with them by blood, name, language, and facility of intercourse; this meeting was distinguished by his attendance, and he congratulated them upon finding a brother from the other side of the water present at their board (cheers). As now situated the ties of America, the success of their commerce, and the encouragement of their familiar association, was of great importance; he sees at this meeting the honest yeomen, and witnesses their nationality in song, never forgetting the great people on the other side of the Atlantic, whose flag is the similitude of our own, that we so much boast of. We are reminded still to uphold it; and if called again to emulate, there is no people he should like to be coupled with so much as their brethren of America; to extend their great liberties, carry their flags through "the battle and the breeze," and blend together that important relationship already existing between them (cheers). The gentleman, when he appeared bidding, was always going ahead, prepared to purchase, be the cost what it might.

The annual toast was proposed, "The biter of the highest price of the day."

Mr. ROCHE begged to thank the gentlemen present for the flattering way in which they had received the toast. He little thought in his desire to obtain the ram, that he was also bidding for the honour of making a speech (laughter). It was said that it was necessary to take care of No. 1; and he had also taken care to get No. 112 (the highest lot). He had crossed the Atlantic to be present on this anniversary, an event which



was almost as well known on the other side of the Atlantic as it was on this; and he hoped that, although this was his first, it would not be his last visit among them. (Loud cheers). America was trying to improve her stock, and was glad to send to the mother country to enable her to do so. He was very grateful to the noble Earl for the kind allusions he had made to America. They were brothers in habits and in religion—(cheers)—and if at any time, through spots on the political horizon, assistance should be required of America for the mother country, that would never be wanting (loud cheers); for on the other side of the Atlantic, people looked upon England as the only stronghold of Liberty, and he trusted that between the two countries the most amicable feelings would ever continue to exist."

The *Mark Lane Express* has the following remarks in reference to the above meeting:—

"This is now the twenty-seventh anniversary of the Babraham letting: and we are told by those who have been most frequently in the habit of attending, that it was in every respect one of the best. The proof here, in some measure, must be taken from the auctioneer's book, which gives a hiring of seventy-one sheep at a gross return of £1,584. In these are included a ram, one of the prize sheep at the Lewes show of last year, which let at the extraordinary sum of one hundred and thirty guineas! It may appear difficult to many of our friends to justify such a bidding as this—one that reads, in fact, something like that approach to "fancy prices," with which the sober business of farming has or should have little or nothing to do. When it further comes out, too, that the gentleman hiring it was the stranger-visitor from the other side of the Atlantic, the less weight may we feel inclined to attach to such a precedent, as the less likely to see it followed up. No one, as it is now almost proverbially known, goes ahead with so much determination as brother Jonathan, when he has once set his heart upon having "an article." It is his pride, and boast, too, to try the length of his purse against the old country; and so, whether it be a race-horse, a short-horn, or South-down, "the figure" he went to becomes a prominent feature in the report of his bargain. Good judgement and good advice may do much for him; but it is what Sam Slick calls "the sperit" that, after all, stamps the value of his Derby winner, his Bates' heifer, or his Jonas Webb's ram.

We should be the last to dispute the real judgement and care evinced by most of our friends from the United States in their purchases of stock. Indeed, as we have already had occasion to state within these few weeks, they are becoming day by day better qualified to make their own selections, and not to trust so much to those "introductions" on which they at first altogether depended. Mr. Roche, in fact, has ample confirmation for the long price to which he extended his offer at the letting on Wednesday. The last bid against him was, we believe, a *bona fide* one, from an English agriculturist, deservedly distinguished as a breeder of some of our best kinds of farm-horses and cattle, though not yet so famous for his flock. Still there is no gainsaying but

that this extraordinary price, standing *per se*, might naturally be regarded with something like a doubt as to its genuine character; and hence the attention we have called to, and the comment we have offered upon it.

There are few who have not heard, if not all enjoyed, the pleasures and real "treat" the Babraham day affords to the lover of agriculture and of rural life. Perhaps of all the many scenes and "sights" our visitors from the United States may be called on to witness or to take a part in, none will be calculated to make a deeper impression upon them than this; none can certainly give them a better notion of what the individual exertions of an Englishman may accomplish, or of how liberally his fellows can encourage and enjoy his success. The first to originate gatherings of this description, none has ever essayed on them with better taste, or in a more thorough spirit of national hospitality, than Jonas Webb."

## The Agriculturist.

TORONTO, SEPTEMBER, 1853.

PROGRAMME OF THE PROVINCIAL EXHIBITION,

TO BE HELD AT HAMILTON, OCTOBER 4TH TO 7TH, 1853.

As this great annual event is near at hand, and knowing the interest which our readers and the public generally feel in the undertaking, it may serve a useful purpose to sketch in regular order, the principal outlines of the proceedings of the Show week.

The site chosen for the Exhibition, is precisely fitted for the purpose, and the Local Committee are making the most energetic exertions for completing the buildings and arrangements in a satisfactory manner. The *Hamilton Spectator*, in reference to the site for the Show, observes:—

"A more beautiful site for an exhibition of this sort is not to be found in the Province. The ground is finely undulating, interspersed with handsome shady oaks, and covers some of the highest points of land in the city. Upon a natural mound, rising some feet above the others, is to be erected the Grand Association Stand, a building of one hundred and sixty feet long and two stories high, and from this point is presented one of the most enchanting views imaginable. Several capacious tents will be employed. To the south and west we have the bold scenery presented by the mountain front, as it sweeps away in the direction of Ancaster and Flamboro', encircling with its rugged arm this favored spot, and forming an amphitheatre of surpassing grandeur and beauty; while to the east and north the eye is charmed with a panoramic view—embracing the city, the bay, the shipping, the dis-

tant beach and old Ontario—which must be seen to be appreciated. Thirty acres in the block, lying between King and York streets, and Locke and Dundurn streets, are now being enclosed by a close board fence, nine feet high, with three gates on York street, and two between King and York streets. The fencing will be completed in the course of a few days, and the erection of the buildings, which are to be very numerous and commodious, is required by the terms of the contract to be finished before the 20th of September. Everything bids fair to sustain the general expectation that the approaching exhibition will be the most attractive, and we trust in its results being the most satisfactory of any yet held."

The payment of a Dollar constitutes a person a member of the Association, to whom a badge is presented, which will admit him free to the Exhibition, and to enter, without charge, whatever Stock or articles he may desire for competition. Members' badges are not transferable, and will admit *only the purchaser*. None but Members (except Ladies and Foreigners) can exhibit for premiums.

*Blood Horses and Thorough-bred Cattle* must be entered, and have their full pedigrees properly attested, and sent to the Secretary, at the office of the Board of Agriculture in Toronto, *not later than Saturday, September 24th*. No animals will be allowed to compete as *pure bred*, unless they possess regular Stud and Herd Book pedigrees, or satisfactory evidence produced that they are directly descended from such stock.

Persons making entries by letter must enclose a dollar for membership, and no entries can be received by the Secretary in Toronto *later than Saturday, October 1st*, after which the books will be removed to Hamilton.

*Monday and Tuesday, Oct. 3rd and 4th*, will be devoted to the entering and arranging of Stock and articles for exhibition, on the Show Grounds. Entries must be completed by eight o'clock on *Tuesday* evening. All entries made on *Wednesday* morning before nine o'clock will be subjected to a charge of 5s. each. After that hour the books will *finally close*, and whatever may subsequently arrive can only be admitted to compete for *discretionary* premiums.

The JUDGES will enter upon their duties early on *Wednesday* morning, and MEMBERS will be admitted to the grounds at 2 o'clock P.M.

The *Public*, or *Non-members*, will be admitted during the whole of *Thursday* and *Friday*; tickets, 7½d. for each admission, can be obtained at the Treasurer's office, where also Member's Badges may be had.

It is intended to hold *Public Meetings* in the City Hall, during the evenings of *Wednesday* and *Thursday*, for addresses and discussions on subjects affecting the agricultural and commercial interests of Canada.

The *Annual Meeting* of the Directors of the Association will be held in the Committee Room on the grounds, on *Friday*, at ten o'clock A.M.

We take this opportunity of reminding the officers of County Societies that, according to the present Agricultural Act (16 Vic., cap. 11, sec. 50), the Directors of the Provincial Association consist of the officers appointed by the Annual Meeting thereof, the ex-Presidents, the Members of the Board of Agriculture, and *the Presidents and Vice-Presidents of County Societies, or any two members whom a County Society may have appointed Directors, instead of its President and Vice-President*. Persons thus qualified have the sole right of voting at the Annual Meeting to be held during the show week.

THE PRESIDENT'S ADDRESS will be delivered on the grounds on *Friday* at two o'clock, after which the awards of the Judges will be declared.

Every exertion will be made for the prompt payment of the Premiums, especially to parties coming from a distance.

A separate List of Premiums is prepared for foreigners, whose articles will pass through the Custom House *duty free*, unless they are actually sold.

Delegates, Judges, and Members of the Press, are particularly requested to report themselves at the Secretary's office on their arrival.

We wish the public, particularly our fellow-subjects in the Lower Province, to understand that the Exhibition is equally open to *all Canada*.

The Local Committee have made arrangement with Railroad and Steamboat Proprietors



for carrying visitors, stock, &c., to and from the Exhibition, during the show-week, at the usual reduced rates. The Hotel and Boarding-house keepers in Hamilton, have agreed not to advance their ordinary rate of charges,—which will vary from 5s. to 7s. 6d. per day, for meals and lodging. Hamilton with its immediate neighbourhood, is very favorably situated for accommodating the vast numbers, which it is confidently expected the approaching occasion will call together. There are some engineering works in the vicinity of this thriving city alone worth the expense of a long journey to see; while the country for many miles around is not exceeded for picturesque beauty and agricultural advancement by any equally extensive area on the North American continent.

In addition to the numerous prizes offered by the Association, amounting in the aggregate to about £1,500;—the *President, Wm. Matthie, Esq.*, offers the handsome sum of £50 for particular prizes; while the *Canada Company* continue their usual liberal support, and the *Ex-President, T. C. Street, Esq., M.P.P.* again offers a handsome prize for a Stud Horse. Nor must we omit to notice the Premium for a Draining Tile Machine, by His Excellency the Governor General.

All that is required to ensure another glorious display of the results of Canadian skill and industry is the prompt and hearty co-operation of the people. And we shall be much mistaken, as well as deeply mortified, if amidst our general prosperity, in an age and on a continent, on both of which are so deeply marked the signs of progress, the approaching Provincial Exhibition at Hamilton should prove in any way unworthy of our highly-favoured country, or of the intelligence, energy, and character of our people.

Persons desirous of farther information may obtain Premium Lists, containing regulations, &c., by applying to the Secretary of the Board of Agriculture in Toronto, or to *Neh. Ford, Esq.*, Secretary of the Local Committee, Hamilton.

Our exchanges will serve the interests of the Public by publishing an epitome of these arrangements.

ADDITIONAL PRIZES FOR THE PROVINCIAL EXHIBITION.

Just as we were going to press we received the following communication:—

Toronto, August 29th, 1853.

G. Buckland, Esq.,

Secretary Board of Agriculture.

SIR: Taking a deep interest in the Education of the Country and conceiving that the choice of proper materials for promoting its diffusion, is a legitimate subject for competition at the approaching Provincial Show, at Hamilton, may I request you to offer the following premiums for competition, for which I beg to enclose the necessary funds.

I am, Sir,

Your most obedient servt.

A CANADIAN.

The best collection of School Books, printed and bound in Canada, for the use of Common Schools and Grammar Schools. £2 10 0 and Diploma.

The best collection of Books, Maps, &c., published in Canada, descriptive of the Topography, History &c., of the Province. £2 10 0 and Diploma.

A VEGETABLE SERPENT.

According to some Italian journals, a new organized being has been discovered in the interior of Africa, which seems to form an intermediate link between vegetable and animal life. This singular production has the shape of a spotted serpent. It drags itself along on the ground, and instead of a head, has a flower shaped like a bell, which contains a viscid liquid. Flies and other insects attracted by the smell of the juice, enter into the flower, where they are caught by the adhesive matter. The flower then closes and remains shut until the prisoners are bruised and transformed into chyle. The indigestible portions, such as the head and wings, are thrown out by two aspired openings. The vegetable serpent has a skin resembling leaves, a white soft flesh, and instead of a bony skeleton, a cartilaginous frame filled with yellow marrow. The natives consider it delicious food, at least so says the paper from which we copy the above, but we consider the whole story a fabrication.—*Scientific American*.

The Western Virginia Agricultural Fair will be held on Wheeling Island, September 14th, 15th and 16th. Ten acres of ground have been enclosed for the purpose, and the halls for floral, mechanical and manufacturing exhibitions are in process of erection. The arrangements are all designed for succeeding Fairs, for seven years.

## LIVE FENCES.

To the Editor of the Canadian Agriculturist:

SIR,—The formation of Township Agricultural Societies, and the establishment of Township Farmers' Clubs, are no doubt beneficial in their results, from the stimulus given to competition in the exhibition of stock and vegetables, in the first case; and the information elicited in the discussion of the several subjects propounded, in the last. A judicious rotation of crops—the rearing, feeding, management, and improving the breed of cattle, horses, swine, &c.—road making—draining—and many other topics relative to the farm and the farmer, have been handled, and *well* handled, in the several clubs, and have, no doubt, raised a spirit of enquiry, and also led to improvement in practice.

There is one subject, however, which I have not seen discussed, but which, I take it, is becoming of exceeding great interest to the farmers of Canada, and which, somehow or other, seems to have a bearing on all the subjects above mentioned,—I mean *fence-making*. Rails will not last for ever. In very many places rail timber is exhausted, and rails have to be brought from a distance, and at great expense. Stones are not to be had in every section of the Province; and even if they were, and put up with great care and caution, although they might possibly make a solid and durable fence, yet, I take it, they are not generally admired. What is to be done? Surely it is a subject not unworthy of discussion in the different Farmers' Clubs and Societies of the country, and, I hope, of serious notice by the Provincial Board and Minister of Agriculture, to ascertain—and when ascertained, to encourage—the best mode of making permanent fences, in lieu of the perishable, and I may say unsightly, fences now in use. As temporary fences in a new country reclaimed from the wilderness, they have done good service, but they ought to give way to something more indicative of the *fait accompli*, the settlement and improvement of the country on a permanent basis. These crooked fences of ours, made of wood, cannot last for ever,—that is another fact. Therefore, I say it would be well and prudent to be prepared for their final decay, by testing beforehand the feasibility of making good and permanent fences, and combining therewith, if possible, that which may be ornamental and serviceable both in a general and local point of view.

Now what I would propose is, a quickset fence. There are various descriptions of them to be seen in England, and I should not be disposed to quarrel with any one for adopting that one which may best please his fancy, or may be best suitable to the soil and locality he may be

in; but with the view to the present *partial*, and ultimate *perfect*, drainage of the country, I would propose a hedge and ditch of the following description, as the one, in general, best adapted for the drainage of the land, and as a good fence. The ditch to be 3 feet 6 in. wide at the top; to be 4 ft. in depth, with the width of one foot at the bottom,—the bottom to be well cleaned and levelled, to permit the free flow of water. The earth from the ditch to form a bank of a height and width corresponding with the excavation made, and the front or face of it to be placed six inches from the brow of the ditch, to allow for the settlement of the bank;—so that in fact, from the bottom of the ditch to the top of the bank would be 8 ft.; the width of the ditch at the bottom 1 ft.; the width of the bank at top 1 ft.; at its base, 3 ft. 6 in., the same width as the upper part of the ditch. In the bank, at the height of 2 ft. or 2 ft. 6 in., thorn layer and young seedlings of oak, maple, or other trees, would have to be placed before the top of the bank is completed by the mould from the ditch, to form the future fence; the whole to be crowned at the top with wattled hedging to protect the bank until the layer is of sufficient height and strength for its intended purpose. For the layer I would propose the English white or black thorn, both of which thrive well here, or the Canadian thorn, which seems equally well adapted for fencing. The thorn layer and the seedlings of the future trees to be of the second year's growth; and the roots of thorn layer to be placed 4 in. apart from each other, the seedlings of trees one yard from each other,—that is to say, eight roots of thorn and one seedling tree to the yard.

Could it once be established that a fence of this kind could stand the vicissitudes of our Canadian climate, as I feel confident it would, if made by a careful and skilful hand, great good would result to the farmer and the public. The ditch of itself would partially drain the field round which it runs, and, if made to the depth I suggest, would be a receptacle for the water from the underdrains of the land, when underdraining shall be taken up as a part of our husbandry. The fence I speak of is common in many parts of England, with this exception, that perhaps the ditches are not altogether of the depth I suggest, because most of them were made before underdraining in the way it is now carried on was a part of English husbandry. Could we once establish these fences, our roads would come in for their share of the benefit by good drainage; and, what would be of great advantage to the public, our roads would not be so frequently moved as they now are at the caprice of our municipal councillors, and permanent improvements, in gravelling and other.



wise, might with advantage be made on them. There can be no doubt the country would be beautified by the substitution of shady, pleasant-scented live fences, in lieu of our present unsightly and frail crooked affairs. I even venture to predict that the climate itself would be ameliorated. At present I would be glad if you would bring the matter before the agricultural public, with some remarks of your own on the value of improving our fences. I should like to see the subject fully discussed, so that an interest may be taken in it, and finally, as our Yankee neighbours have it, "action had thereon."

Mr. Editor, I think the subject of substituting good, handsome, and permanent fences for those we now have, of so much importance to the advancement of agriculture and the benefit of the Province, that, if others thought as I do on the subject, I should be glad to see the Parliament of the Province placing £500 or £1000 at the disposal of the Board of Agriculture, to be distributed in premiums through each county of the Province, to the persons who shall make the first, second, and third-best 100 rods of the fencing I have described by midsummer, 1858. It would require something like that time to raise the thorn layers and seedling trees from the seeds of this year, transplant them into the soil where they are to grow, and to enable them to take good root in it.

I am, Sir, yours obediently,

A HEDGER AND DITCHER.

August, 1853.

P.S.—If you, or some of your correspondents would acquaint us with the proper quantity of lime, rock or slacked—the state of the land, and the best time, for receiving it—for the general benefit of the soil, but more particularly for securing a wheat crop, you will oblige.

#### REMARKS.

We strongly recommend the subject embraced by the preceding communication to the earnest attention of our readers. It is a matter of constantly increasing importance, and we shall always be happy to open our pages to its elucidation. Will such of our readers as have had practical experience in raising live fences in Canada favour us with some account of the results? In the meanwhile, we may observe that it is intended, as soon as practicable, to test the capability of different plants for the construction of hedges, on the Experimental farm, near this city.

The quantity of lime per acre, applied as manure, will vary materially, according to the actual condition and composition of the soil. On land containing naturally very little lime, particularly if it abounds in large quantities of imperfectly decayed vegetable matter, from 80 to 100 bushels of *quick* lime would not be found too much. Such a dressing, however, would not need repeating but at long intervals. The best time, perhaps, for applying lime on land intended for wheat, is a short time before sowing; spreading it evenly over the surface, followed by a good harrowing, and the last ploughing, at a moderate depth. Lime has a strong tendency to sink into the ground, and ought not to be covered too deeply. It should be applied, if possible, in dry weather, on land free from stagnant or superfluous water. Upon naturally wet soils the application of lime is a useless expenditure. Hence the necessity of draining.—ED.

#### TRIAL OF REAPING MACHINES.

To the Editor of the *Agriculturist*.

HAMILTON GARDENS,  
Port Hope, Aug. 15, 1853.

DEAR SIR,—A very interesting trial of Reaping Machines took place on my farm last Saturday, on a somewhat novel principle. It was not intended as a competition for premiums at all, but as I was aware that three or four of the most approved machines of this kind were actually working in this neighbourhood it would not be amiss to place them in juxtaposition, and then let the farmers judge for themselves.

You are well aware of the difficulty there is for any Committee of Judges to decide on the merits of machines or implements of any kind, without seeing them in actual operation; but when, as in the present instance, a number of machines were put in the same field under the same circumstances, and without the usual excitement of being supposed to work against each other—much more room was left not only for *each man's fancy*,—but also the comparative working of the machines themselves, could be more easily decided upon.

The idea on my part originated from hearing that I was appointed a judge on Implements at the forthcoming show at Port Hope, for the County of Durham, in October next, and knowing from experience the utter impossibility of deciding on the merits of things of this kind, merely standing on the show-ground, without having seen them tried at all, I proposed to my

friend Mr. Choat, who has introduced into this vicinity one of the self-raking machines made in Brockport, N. Y. State, and also to Mr. Rapalje, who has had manufactured in Port Hope this season, a number of the Burrall Machines, that they should bring them to my place and let them work together. I had also one of Hussey's Machines which has now cut its fourth harvest, and which has not cost me altogether more than five or six dollars in repairs, and that only in simple wear and tear, and which is now as good as ever.

Four machines were in the field, viz., Mr. Choat's self-raker, two of the Burrall machines, and my awn Hussey machine, above mentioned. The afternoon of Saturday, the 13th inst., was, as you have not forgotten—hot—but that hardly begins to express the actual feeling of 'Roasting, Broiling, and Stewing,' we had to experience; yet notwithstanding, a very respectable assemblage of not only the *Bone and Sinew*, the practical farmers of Hope and Hamilton Townships, but also many of the Merchants and Mechanics of Port Hope, as well as several of the Contractors and Engineers of the Port Hope and Lindsay Railroad attended; and all, as far as I am at present posted up, expressed themselves not only gratified, but delighted with the performance.

Of course, as I am to be a judge, as I have already mentioned, it would be quite invidious to mention my own opinion: and really it would puzzle the best judges to decide upon the mere shade of difference between the machines, where all worked so well; but I can say (and the manufacturers themselves will not be sorry) that many of our *stiff* Farmers, who have been hitherto sceptical about reaping Machines, were that day converted, and the result will be that every farmer who has got two-thirds of his stumps out of the ground, will *go for a reaper*.

There cannot be on the broad surface of our globe a country where labour saving machines can be of more benefit than to ourselves; and particularly as British Capitalists have turned their attention this way at last, and coaxed our laborers to work on railroads instead of farms, and that is what is now arousing the more lethargic of our farmers to turn their attention to things of this sort.

Yours truly,  
JOHN WADE.

**GRAPE VINES.**—Loosen the earth about their roots and give them manures. Swamp muck which has been decomposed by the salt and lime mixture answers a good purpose. Whole bones buried near the roots of grape vines will soon be appropriated, and, during the summer rest, a little potash water will hurry up their action.—*Working Farmer.*

## REMARKS ON THE POTATO PLANT.

BY DAVID FERGUSON, ESQ.

The following very interesting paper, by David Ferguson, Esq., was read by the Rev. Mr. Porter, before the Kilkenny Literary and Scientific Institution. Prefixed to it being an engagement by Mr. Ferguson to pay £500 promised in the paper, when the Council of the Literary and Scientific Institution of Kilkenny decide it fairly gained. The Provincial Bank of Ireland, Kilkenny, is named as reference. The seed mentioned in the paper may be obtained from Robert Molyneux, Esq., John's Bridge, and from Mr. William Bryan, Scotch House, Kilkenny:—

"The potato plant is only an annual, empowered by God with two modes of reproduction. The one, like the oak tree, lives only for years; the other, like the acorn, liveth for ever. Both reproductions are deposits from the plant, different in chemical properties; '*live and die*' independent of each other, with the plant providing for, but independent of, both.

"Here (exhibiting a potato stalk) is the plant. This stalk, with its small fibres, is the annual. These eight apples upon the top possess each from three hundred to three hundred and twenty seeds, each seed has the germ of a plant with seed lobes, which perform the same office to the germ that the yolk of an egg does to the germ of a bird, supplying it with nutriment until all its parts are perfected by germination to supply itself.

"Hence the seed in the potato apple is, like the acorn of the oak, the seed in the apple of the tree, or the egg of a hen. These eight potatoes at the bottom of the stalk possess each a quantity of eyes; each eye possesses the same property *for a time* that the seed or egg of a hen does; but the potato, like the tree and hen, *becomes* aged and past bearing; the oak lives after it *ceases to bear*, as do also the apple tree and the hen, and *so also does* the potato. But the oak, the apple tree, and the hen die from age, and why not also the potato? Has nature made it an exception?

"Besides, like the oak, the apple tree, and hen, the potato has a graduated scale of ascending and descending life. Here (exhibiting a potato stalk) is a plant grown direct from the seed. Observe, the potatoes are small, like marbles. This stalk blossomed, but had not strength to form an apple. Here (exhibiting a large stalk) is another which is one year older. Observe the difference in the bulk of the tubers which it produced. They may be compared to a small



egg increasing. This stalk also blossomed; and potatoes thus grown from seed continue to blossom up to five years, and then first begin to form apples. Here (exhibiting a stalk) is a plant six years' old, which bore an apple; consequently I call the parent of this apple a potato; the plants before it not being able to perform the functions of a potato I call germs, Nos. 1, 2, 3, and so on ascending according to their age.

"Now to get at the descending germ let us take this lumpers [now exhibited]. I can trace the history of this kind of potato back to the year 1818; and I am told that from 1825 to 1835 it was so charged with vitality that it would grow without manure in any soil, of large size, and producing 160 barrels to the acre, but of a quality more fit for cattle than for man. Then was the time to take seeds from its apples and have the young rising into strength for cattle, and the old losing strength, but becoming more dry and floury, for man's use.

"This lumpers, once the prince of potatoes, like its great progenitors, the barbers, the kippens, white Turks, red Turks, slipper-potato, peeler-potato of Connaught, black-bull of Kerry, and a host of others, each in their turn ruled supreme. They are now gone. Here is the lumpers, the cup, English-red, and Irish apple; look at them. The red twelve years ago produced 160 barrels to the acre; at present, in the best land, it produces only 60 barrels; lumpers 40 barrels, and cups 30 barrels; and, like the ascending germs, they now blossom, but cannot grow apples; consequently all these kinds of potatoes enumerated may be called 'descending germs.' See this diagram shewing the life of the lumpers. [Two ingenious diagrams, which, of course, we have no means of representing, were here exhibited and explained by the Rev. Mr. Porter.]

"The first diagram shews the potato existing for thirty-four years in forced states of being; first, as an ascending germ in blossom for five years; a potato, with apples, for nineteen years; and there not being any apples seen upon the stalks for the last ten years, they then become descending germs, unable now to give any produce on mountain land, where they formerly grew. The law laid down in this diagram rules every potato, and the same law guides its seed; thus we find the plant to grow apples for nineteen years.

"The second diagram shows the plant ascending in vitality for ten years, its longest day, and green from five to seven months, in proportion to its age; then descending, losing its vitality, from its tenth to its nineteenth year; at which period it remains green only five months, and produces no seed. Thus the seed supplied

by the parent plant at its longest period must of necessity be best and strongest. The descending germ of the tenth year will remain green only three months, and with little produce. Hence, seed from the plant at ten years is perfect; the other only in proportion to its place in the diagram; consequently I fear it is hardly possible to procure good seed now, and I question if ever perfect seed has been sown, except by fortunate accident, the belief hitherto entertained being, that the seed was only to give variety of kinds.

"The plant at transplanting is as perfect in all its parts as the oak, the apple tree, or the female bird from the egg. The root performs the same functions to the plant that the stomach does to the animal—absorbs juices from the earth and transmits them through one set of vessels to the leaves, which are a continuation and extension of the same vessels and matter. These extend their surface for absorption and transmission of air and moisture, assimilate the juices and return them through another set of vessels to nourish and enlarge the various parts of the plant. Thus, the leaves perform the same functions as the lungs of the animal, besides giving shade to the vegetable. These truths point out the true mode of cultivating ascending and descending germs, and also the potato. The plant from a perfect potato lives seven months perfecting its fruit before it dies. The plant from descending germ lives only from five to three months, unable at either stage to perfect its fruit. Therefore, when the plant dies, the fruit not being ripe continues to absorb the decomposing matter in the leaves and vessels, until these vessels close. Consequently, when we see the leaves getting spotted and black, and emitting an offensive smell from decomposing matter, we should at once dig the crop to save what potatoes exist, and turn the land to some useful purpose. This is what we, in our wisdom call, 'the incomprehensible potato disease,' produced, you will observe, by our own neglect of the immutable laws of God and nature.

"The largest potato, being first from the plant, and consequently longer in the world than the small one, is best for seed. This (producing a tuber) is a potato with twelve eyes, consequently containing twelve plants. If I set it whole I put twelve plants to live upon the land of one; in other words, I put twelve cows to live upon one cow's grass. Therefore scoop out the eyes of the large potatoes for seed, and use the rest. Let seed potatoes be the largest, and left in the light until they become green. They are thus best for seed, but not so good for the table, the oxygen having escaped. To keep potatoes for use, turf char is best; it will keep them perfect, though not a month old.

"To give an idea how to manage potato seed for sale or use:—Hang up the apples in the barn or other out-house, in the light, until they become white, soft, and pulpy, like a ripe gooseberry; then press out the seed into water, and throw away the hull; wash the glutinous matter from the seed by change of water, and dry it in the sun; or take a pulpy apple and press out the seed between the folds of blotting paper, the paper absorbs all the glutinous matter, and you will find from 300 to 320 seeds a (sufficient quantity for one farmer). Another mode:—Cover the apples in sand, which will absorb the hull and glutinous matter; and in spring sow sand and seed together in a hot-bed, which is simply twelve inches of stable manure covered with two inches of earth. I transplanted 800 plants from a box four feet long by one foot wide, when the plants were from four to six inches above the earth, to drills eighteen inches apart, and sixteen inches between each plant. March or April is the best time for transplanting, and drills should be adopted in every instance in preference to lazy beds, because the latter retain rain and grow weeds, which prevent the circulation of air, and cannot be easily got at. The juices of the potato sleep during winter and awake in the spring; therefore, do not plant before February. The experiments stated in this paper can be tried and tested equally by the learned sage or unlettered peasant, for one shilling.

"This paper demonstrates, from the leaf being the lung of the plant, that the potato cannot possibly grow after the leaf dies, except we suppose it to grow upon decomposing matter; and the diagrams demonstrate that there never was any disease in the plant or potato. Why and whence then are these various antidotes against the 'mysterious incomprehensible potato disease' leading the peasantry of these realms to loose their land, manure, and labour, year after year? A Frenchman tells us to insert a pea in each set to absorb the superabundant moisture—the cause of blight. An Englishman bids us plant in tan; a Scotchman tell us to plant in peat char, because, having ninety-six per cent. of carbon, it is, like the pea and tan, a certain cure. The Royal Agricultural Society of Ireland has a gentleman that professes to take the sting or disease out of the potato by some chemical charm: and there is another gentleman who undertakes to extract the sting from the earth! *but neither of them tell how.* These like other varieties of mysterious cures and causes whispered from man to man, stagger the senses and make reason reel. Therefore, in order that the truth of my views, and the virtues of these charmers, may be fully tested, I have lodged FIVE HUNDRED POUNDS in the Provincial Bank, which I

now freely offer to them and the world, if they bring to this Society, within three years, the following potatoes, which have been the principal support of the peasantry of this country for the last thirty-four years—namely, the old Irish apple, the cup, the English-red, and the lumper, in the same strength that I shew this stalk, with apples upon the top, potatoes at the bottom, and remaining green from 12th April to 12th October.

"The potatoes now exhibited (and which are open to inspection until seed time) shew ten distinct varieties, ranging from one to six years old; these have never been in the world before, and their existence demonstrates that the power to grow them existed previous to, and since the blight of 1845 and 1846."

#### ON THE COMPARATIVE VALUE OF LARGE AND SMALL ROOTS.

By WILLIAM K. SULLIVAN, *Chemist to the Museum of Irish Industry*; and ALPHONSE GAGET, *Assistant Chemist.*

In consequence of the practical importance which was attached to some of the results obtained during the investigation into the composition of the sugar beet, carried on in the Museum of Irish Industry, and which were published in the form of a parliamentary report, and especially to that of the relative value of large and small roots, which was so strongly dwelt upon by Mr. Sproule, in his paper read before the Royal Agricultural Society, it was thought advisable to continue the investigation of last year. As the examination was carried on as a part of our official duties, we could not make any use of them, prior to their authorized publication, but for the kindness of the director, (Sir Robert Kane,) who permitted us to lay a short abstract of the principal results obtained before the Society.

A great number of analyses of the usually cultivated roots have been from time to time published; but in consequence of certain necessary conditions not having been attended to, the results have been of little practical importance. Now, one of the first conditions is that of weight, which, as we shall now endeavour to show, exerts a very remarkable influence upon the composition of bulbous roots.

On the Continent, where the roots are grown for the purpose of manufacturing sugar, it was long since remarked, that large-sized roots yielded less sugar than moderate-sized ones, between one and three pounds in weight. Analytically this was fully shown by the researches of the continental chemists, who had examined the subject, and was fully confirmed by our results of last year. Further than this, no practical application seems to have been made of the fact; and as very large roots grown in a rich and properly tilled soil may be better than moderate-sized ones grown in another place, no general law as to growth was surmised. In most previous investi-



gations upon the composition of roots the examination was confined to a single root from each locality; and hence it is owing to this cause that no satisfactory results were obtained.

To remedy this defect, we determined to take six roots from each locality—three of the largest and three of the smallest; and in order to diminish the influence of accidental causes, we subjected a great number of roots to examination. Our results are, in fact, founded upon the examination of about 450 roots of every kind, including Swedish turnips, carrots, the different varieties of the beet, &c.

With a very few exceptions we have found that, as a general rule, small roots contain a larger percentage of solid matter than large roots, in some cases even to the extent of fifty per cent. Thus, the mean percentage of solid matter contained in three roots of sugar beet, varying from 3lbs. 11½oz. to 4lbs. 2oz., grown by Mr. Niven, of Drumcondra, was found to be only 10.408, whilst in three small roots, varying from 1lb. 3½oz. to 1lb. 11½oz., it was 17.427; or, in other words, 100 tons of the small roots would be equal to 167.43 tons of the large. To take another example:—Three roots of long red mangel-wurzel, grown by Mr. Kelly, of Portrane, varying from 6lb. 14½oz. to 9lb. 3oz., contained only 10.986 per cent. of solid, whilst three small roots, varying from 6½oz. to 7½oz., contained 15.624 per cent.—that is, 100 tons of the small contained as much solid matter as 142.18 tons of the large. The rule applies equally to Swedish turnips. Thus, three turnips grown by Mr. Boyle, at the workhouse farm of Ballymoney, county of Antrim, varying from 6lb. 5½oz. to 6lb. 12oz., yielded 13.731 per cent. of solid matter, and three small roots, varying from 1lb. 2oz. to 1lb. 5½oz., 16.254 per cent.; or, in other words, 100 tons of the small would be equal to 118.37 tons of the large.

Owing to the influence of accidental causes—such as the comparative ripeness of the grains of seed, the influence of manure, &c.—it could not be expected that, in every case, a small difference in weight would be accompanied by a corresponding difference in the amount of solid matter; and accordingly we find that, in many cases, a root of 4lbs. may contain as much and even more solid matter than a root of 3lbs. Nevertheless, such examples are rare, as will be found by reference to the tables of the detailed report about to be published. But, if we divide the roots grown upon a field into several groups, showing large differences of weight, the rule becomes universal. Thus, in seventeen roots of sugar beet, grown by Lord Talbot de Malahide, upon the Island of Lambay, there were—

4 roots of from 6 to 8lbs. in weight, which yielded, as a mean per cent. of solid matter. 12.541  
5 roots, between 3 and 5lbs. .... 14.197  
8 “ under 3lbs. .... 15.756

These results clearly indicate, that with increase of weight the solidity of root diminishes.

On tabulating our results we have found that, taken as a whole, small roots, no matter how or where grown, are superior to large roots in the amount of solid matter. The following table

contains a summary of our mean results, as far as we have been able as yet to reduce them:—

SIZE OF ROOTS	White Sliesian or Sugar Beet.	Long Red Mangel-wurzel.	Orange Globe Mangel.	Red Globe Mangel.	Swede Turnips.	Red Carrots.	White Belgian Carrots.
Average of roots.							
Above 7lbs.	10.204	10.017	10.785	8.704	10.755	—	—
“ 5lbs.	11.653	11.476	11.028	10.115	11.257	—	—
From 3 to 5lbs.	15.708	14.934	13.974	12.050	12.810	—	—
Average of all roots.....	14.532	13.635	12.645	11.183	12.031	13.370	12.990

This table presents some curious results, beside showing the decreasing value of roots as the size increases. Thus, for instance, as far as these results go, the sugar beet contains the largest amount of solid matter of any of the root crops now cultivated; and red and white carrots, though usually sold for £2 or £2 10s. per ton, are very little superior to ordinary swedes, and much inferior to the varieties of beet. Of course we do not pretend that the value of roots can be determined by the percentage of solid matter alone, as its composition must be taken into account. But, in the same variety of plant, it will give an approximation to the truth—indeed, practically speaking, a very close one; in different species, or different families of plants, it is absolutely necessary to take the composition as well as the quantity of solid matter into consideration. In the case of carrots, however, an examination of the solid matter does not show that they are superior to that of the beet.

In the few exceptions to the general rule which we have observed, the large and small have had nearly the same composition, and no case has occurred where the small roots exhibited a decided inferiority to the large. In general, we were able to account for the cause of these exceptions. In one case, it arose from the seed being mixed; consequently, each root examined belonged to, more or less developed, distinct varieties. As a general rule, we have found that those roots of a particular variety of the beet which had white flesh were superior to those exhibiting a coloured flesh. In one case, this was remarkably shown, as the largest root which had this character was far superior to the smallest, which was remarkable for the amount of colouring matter which it contained. Another cause of exception was, that the roots which grew out of the soil, and whose upper segment was coloured more or less green, contained less solid matter than those which had grown fully under the soil. This result is in perfect accordance with the fact, that the segment of the root immediately below the crown contains less solid matter than the body of the root; and hence, if a large part of the root grows out of the soil, the portion thus exposed will partake of the character of that segment.

This last observation would seem to recommend the hoeing up of the soil close to the crown,—a practice which, however, appears to be opposed to that of practical farmers. It is singular that not a single exception occurred in the Swedish turnips.

These results lead to the conclusion, that nearly all the analyses of roots hitherto made, especially with reference to the action of manures upon gross weight and composition, are valueless. The same remark applies to all experiments made upon the relative feeding qualities of certain crops. We make this sweeping assertion with considerable diffidence, although we feel certain that, on a little consideration, it will be found to be just. Suppose, for instance, that roots grown with one manure are to be compared with the same kind of roots grown with another manure; it is quite clear, that if the roots of one set examined be larger than those of the other, the manure with which the small roots were grown will be pronounced to be the better adapted of the two for the growth of that particular root crop. Now, the size of the roots depends, among other circumstances, upon the intervals between the plants; and hence, in all such comparisons, the manure applied to land upon which the close-planting system prevails will have the advantage over that applied to land cultivated under the other system. Need we wonder, therefore, that practical agriculture has hitherto derived so little benefit from such an analysis?

It is needless to point out the influence which the facts that we have established must have upon the system of giving prizes for large roots, on the one hand, or of growing them on the other. It is evident that the object of the farmer ought to be, to grow the largest possible amount of food from a given space of ground, quite irrespective of the size of the roots; and if science leads to the conclusion, that that end will be best attained by the cultivation of moderate-sized roots, the present system, which favours the growth of large roots, must be modified. It is for the practical agriculturist to show how this is to be attained; but we are of opinion that a good many useful hints might be gleaned from the practice followed on the continent, with reference to the sugar beet.

#### TIPTREE FARM.

Mr. Mechi held his annual gathering of agriculturists on Wednesday, July 20th, and it went off as pleasantly as ever. Mr. Mechi entertained 300 guests, every one of whom must retain most agreeable recollections of his visit. The day was fine, and the first three hours of the day were spent in examining the state of the crops, and in testing the latest novelties in agricultural implements. Whatever may be the effect of a very unpropitious season elsewhere, at Tiptree it has done no harm; and while the agriculturists there seemed to be generally of opinion that the harvest would be short and late, not a grumble about the weather fell from their host's lips. He has this year very excellent wheat, and in other respects the produce of his farm promises a good average; but the two points on which his management shows strongest and to the best advantage are his clover and his rye grass. These bear unmistakable testimony to the value of the new system of liquid manure irrigation which Mr. Mechi has adopted, and in the details of which he has carried out many valuable improve-

ments. The clover is a second crop, and the rye grass a third, and both are exceedingly luxuriant. It may therefore be regarded as the chief feature of the present gathering at Tiptree, that it furnishes, within easy reach of the metropolis, a remarkable confirmation of the large results which have been already obtained in Scotland from liquifying the manure of the farm, conveying it through iron pipes to every part of the land, and, by gutta percha tubing attached to hydrants, distributing it liberally either upon the fallows or upon the growing crops. Such a system not only saves the heavy expense of cartage, but presents the plants with their natural food in the most convenient, direct, and effective form. It is a great step in advance; and, being no longer an experiment, but fairly adopted by the most enterprising farmers, is paving the way for the introduction of that larger and still more important change, by which the sewers of the towns will be made to fertilise the country, and, instead of breeding fever and pestilence, will help to increase the supply of food for the people. The next important point of any novelty brought forward was the trial of Samuelson's digging machine. It is rather too much for horse power within any moderate limits, but the manner in which it raises and pulverises the land, and the depth to which it is capable of acting, encourage us to hope that the time is not far distant when we shall have that most desirable and valuable of all implements, and which has been so long sought for—a steam digging machine doing the work of unskilled agricultural labour, and relieving our peasantry from the bondage of toil, the conditions of which are compatible with the grossest ignorance.

In the management of his stock, Mr. Mechi has made some advances upon the practice of former years. By a coating of limewash he has got rid of the swarms of flies that used to torment his cattle, and the same simple expedient tends to keep his feeding-sheds cool and sweet. His tank regularly every morning draws off the accumulations of the manure during the previous day, which are washed into it and liquefied.—He now keeps upon the produce of the 170 acres of which his farm consists, 360 sheep and 40 bullocks. He has also about 160 pigs, which, however, are fattened off with purchased food. The spirit which draws such a character from his shop in Leadenhall-street to improve the agriculture of his country is more creditable to him than the ambitions of many people whom society places far higher up in her ranks. Mr. Mechi, if he never produced a favourable balance-sheet, has done great service to the cause which he has striven so vigorously to promote. He has, in very difficult circumstances, and with unvarying good humour, been a chief connecting link between the practice and the theory of farming.—Claiming, and even insisting to be recognised as practical, he still inclined his ear to the speculative—some said the visionary. When events had opened a chasm between the two, he adventurously and goodhumoredly helped to span it, and now he is doing all in his power by these annual gatherings to cement the union so effected. The names of the people he invites to Tiptree sufficiently indicate this motive, for there we found



yesterday men eminent in a number of departments, kindred more or less to the pursuits of agriculture, all brought into friendly communication with many of the best agriculturists not only in this country but from France and America.—The Earl of Harrowby, Lord Kinnaird, and Viscount Ebrington fairly represented a liberal-minded landlord interest favourable to improvement. Viscounts de Courzay, M. Barral, the Hon. Stephen Salisbury, M. Gourdiér, M. Allier, and Professor Nash gave a suitable idea of the interest with which foreign countries are watching our progress both in the practice and the science of agriculture. Then Mr. Mechi had invited Mr. Chadwick, Dr. Southwood Smith, and the leading officers of the General Board of Health, to show his anxiety for the union of sanitary reform and increased fertility. Such names as those of Mr. Samuel Gurney, Mr. Charles Knight, Mr. Bohn, Captain W. Peel, R.N., Mr. Waddington, M.P., Colonel Leslie, Captain Owen, R.A., Mr. Warren Delarue, Mr. Fuller, and Mr. Bird may appear somewhat out of place on such an occasion; but when it is remembered how widely spread the taste for rural pursuits in this country is it cannot be considered inappropriate that Mr. Mechi should have included them in his list of invitations. Besides, he took care to have present a number of our most enterprising farmers, breeders of stock, and implement makers.—Among these we may mention the names of Mr. Jonas Webb, Mr. Fisher Hobbs, and Mr. Garrett. Last, but not least among the guests, was Professor Way, whose recent researches in agricultural chemistry have attracted such great and deserved attention. When the survey of his farm was over, Mr. Mechi invited the large party which he had assembled around him, to a substantial and well-provided luncheon, set out in his barn, where, after the claims of their appetites, sharpened fresh by air and exercise, had been appeased, toasts went round and speeches were made, chiming in well with the spirit of the gathering.

#### CLASSIFICATION OF SOILS.

The best classification of soils is a chemical classification, founded upon their composition according to the proportion of sand separable by washing; it divides them into sands, sandy loams, loams, clay loams, and clays. It subdivides these again into fine and coarse sands and sandy loams, according to the size of the particles of sand, and into gravelly sands, loams, and clays, according to the proportion of pebbles or fragments of rocks. The proportion of calcareous matter indicates whether they are to be called marly or calcareous sands, loams, and clays; while if they contain a certain proportion of vegetable matter, they are called vegetable soils. Each name should express some defined proportion of sand separable by washing, and of calcareous or vegetable matter. The defect in the classification of soils given in the instructions to the Irish valuers is want of precision in this respect. In such a classification as we advocate, we should have:—

1. *Siliceous soils*, containing from 90 to 95 per cent. of sand. These would be divided, on the

same principle, into blowing sand, coarse sand, good agricultural sand, and calcareous sand.

2. *Loamy soils*; 70 to 90 per cent. of sand separable by washing, subdivided into coarse sandy loam, fine sandy loam, rich loam, and calcareous loam.

3. *Clayey soils*, with 40 to 70 per cent. of sand; divided into clay loam, clay, and calcareous clay.

Each of these soils, termed calcareous sand, calcareous loam, &c., contains 5 per cent. of lime.

*Marly* soils constitute a fourth group, in which the proportion of lime ranges between 5 and 20 per cent., and are divided into sandy marls, loamy marls, and clayey marls.

*Calcareous* soils contain more than 20 per cent. of lime. They are divided into sandy calcareous, loamy calcareous, and clayey calcareous. While in calcareous sands, clays, and loams, the proportion of lime does not exceed 5 per cent. The difference of composition denoted by difference of name, is similar to the sulphates and sulphites of chemical nomenclature, which contain different proportions of sulphuric acid.

According to the quantity of pebbly fragments yielded by a square yard, or by a cubic foot of the soil, they might be denominated *gravels*, or *gravelly* sands, loams, and clays.

*Vegetable* soils vary from the common garden mould, which contains from 5 to 10 per cent. of vegetable matter, to the peaty soil, in which the organic matter is about 60 or 70 per cent. They will be vegetable sands, loams, clays, marls, &c.

Considered geologically, soils may be classed in three groups:—

1. *Local* soils, or those derived exclusively from the debris of the rock upon which they rest, unmixed with the materials of other rocks.

2. *Erratic* soils, containing the mixed materials of several, and in many cases distinct formations, transported by currents of water, which, at the close of what is called the tertiary period of geology, act irrespectively of the present lines of drainage and sea levels.

3. *Alluvial* soils, composed of finely divided matter, transported and deposited by rivers and tidal currents, in subordination to the existing levels and lines of drainage.

In this combined chemical and geological classification, then, we would reverse the form of Mr. Bravender's table, and arrange the chemical groups in horizontal lines, beginning with the siliceous, and refer them to one or the other of three vertical columns, headed erratic, local, and alluvial. We should thus have erratic, local, and alluvial sands, sandy loams, or clays; of which the erratic would be found to be by far the most numerous. To these names might be added that of the formation upon which they rest. Thus we should have, as in a large portion of Norfolk, Suffolk, and Essex, erratic clays and clay loams on the chalk or London clay; and we should have local calcareous soils in certain parts of the chalk, the oolites, and the carboniferous limestone. In the case of alluvial deposits, the soil has been formed of the fine matter derived from so many rocks along the course of the river, that the formation upon which it rests makes little or no difference in its composition.—*Mark Lane Express.*

## MISCELLANEOUS.

## THE BEST METHOD OF KEEPING EGGS.

Some of your correspondents inquire about the best method of keeping eggs fresh; and as we have a plan here which I have not seen mentioned in any of the replies which have been given to these inquiries, I send it to you, particularly as I find it better than any I have seen mentioned:

"Take a half-inch board of any convenient length and breadth, and pierce it as full of holes (each  $1\frac{1}{2}$  inch in diameter) as you can, without risking the breaking of one hole into another—I find that a board of 2 feet 6 inches in length, and one foot broad, has five dozen in it, say twelve rows of five each; then take four strips of the same board of 2 inches broad, and nail them together edgewise into a rectangular frame of the same size as your board; nail the board upon the frame, and the work is done, unless you choose, for the sake of appearances, to nail a beading of three-quarters of an inch round the board at the top; this looks better and sometimes may prevent an egg from rolling off. Put your eggs in this board as they come in from the poultry-house, the small end down, and they will keep good for six months if you take the following precautions:—Take care that the eggs do not get wet either in the nest or afterwards (in summer, hens are fond of laying among the nettles or long grass, and any egg taken from such nests in wet weather should be put away for immediate use); keep them in a cool room in summer, and out of the reach of frost in winter, and then I think the party trying the experiment will have abundant reason to be satisfied with it. I find there are some in my larder which I am assured have been there nearer eight months than six, and which are still perfectly fresh and good; in fact, it is the practice here to accumulate a large stock of eggs in August, September, and October, which last until after the fowls have begun to lay in the spring. If two boards are kept, one can be filling and the other emptying at the same time. This is an exceeding good plan for those persons who keep a few fowls for the supply of eggs to their own family; but would, perhaps, not do so well for those who keep a large stock of hens, as it would take up too much room. I have endeavoured to account for the admirable way in which eggs keep in this manner, by supposing that the yolk floats more equally in the white, and has less tendency to sink down to the shell, than when the egg is laid on one side; certainly, if the yoke reaches the shell, the egg spoils immediately.—*Agricultural Gazette.*

## THE BEST MANURE.

In the scope of my limited observation, in regard to manures—stable manure—the residuum of cattle and the offals of the barn-yard are decidedly the most reliable, and all that is necessary is to provide it in abundance. To those who feed their animals well, there will always be a good return, for animals are chemical locomotives, which transform fodder into manure, and the better the fodder, the better the manure.—*Dr. Keim.*

## THE MYSTERIES OF A FLOWER.

*From the Popular Educator.*

The mysteries of a flower, as indicated in the following thoughts of Professor R. Hunt, of England, are both instructive and pleasing. They are admirably fitted to awaken a feeling of wonder, and call back the heart of man to the love of nature.

Flowers have been called the stars of the earth; and certainly, when we examine those beautiful creations, and discover them analyzing the sunbeam, and sending back to the eye the full luxury of colored light, we must confess there is more real appropriateness in the term than even the poet who conceived the delicate thought imagined. Lavoisier beautifully said, "The fable of Prometheus is but the outshadowing of a philosophic truth: where there is light, there is organization and life; where light cannot penetrate, Death for ever holds his silent court." The flower, and, indeed, those far inferior forms of organic vegetable life which never flower, are direct dependencies on the solar rays. Through every stage of existence they are excited by those subtle agencies which are gathered together in the sunbeam; and to these influences we may trace all that beauty of development which prevails throughout the vegetable world. How few there are of even those refined minds to whom flowers are more than a symmetric arrangement of petals harmoniously colored, who think of the secret agencies for ever exciting the life which is within their cells to produce the organized structure—who reflect on the deed, yet divine philosophy which may be read in every leaf—those tongues in trees which tell us of Eternal goodness and order!

The hurry of the present age is not well suited to the contemplative mind; yet, withal, there must be hours in which to fall back into the repose of quiet thought becomes a luxury. The nervous system is strung to endure only a given amount of excitement; if its vibrations are quickened beyond this measure, the delicate harp-strings are broken, or they may undulate in throbs. To every one the contemplation of natural phenomena will be found to induce that repose which gives vigor to the mind, as sleep restores the energies of a toil-exhausted body. And to show the advantages of such a study, and the interesting lessons which are to be learned in the fields of nature, is the purpose of the present essay.

The flower is regarded as the development of growth; and the consideration of its mysteries naturally involves a careful examination of the life of a plant, from the seed placed in the soil to its full maturity, whether it be as herb or tree.

For the perfect understanding of the physical conditions under which vegetable life is carried on, it is necessary to appreciate in its fullness the value of the term *growth*. It has been said that stones grow—that the formation of crystals was an analogous process to the formation of a leaf; and this impression has appeared to be some-



what confirmed by witnessing the variety of arborescent forms into which solidifying water passes, when the external cold spreads it as ice over our window-panes. This is, however, a great error; stones do not *grow*—their is no analogy even between the formation of a crystal and the growth of a leaf. All inorganic masses increase in size only by the accretion of particles, layer upon layer, without any chemical change taking place as an essentiality. The sun may shine for ages upon a stone without quickening it into life, changing its constitution, or adding to its mass. Organic matter consists of arrangements of cells or sacs, and the increase in size is due to the absorption of gaseous matter through the fine tissue of which they are composed. The gas—a compound of carbon and oxygen—is decomposed by the excitement produced by light; and the solid matter thus obtained is employed in building a new cell, or producing actual growth—a true function of *life*—in all the processes of which matter is constantly undergoing chemical change.

The simplest developments of vegetable life are the formation of *confervæ* upon water, and of lichens upon the surface of the rock. In chemical constitution, these present no very remarkable differences from the cultivated flower which adorns our garden, or the tree which has risen in its pride amidst the changing seasons of many centuries. Each alike has derived its solid constituents from the atmosphere, and the chemical changes in all are equally dependent upon the powers which have their mysterious origin in the great centre of our planetary system.

Without dwelling upon the processes which take place in the lower forms of vegetable life, the purposes of this essay will be fully answered by taking an example from amongst the higher class of plants, and examining its conditions, from the germination of the seed to the full development of the flower—rich in form, color, and order. •

In the seed-cell we find, by minute examination, the embryo of the future plant, carefully preserved in its envelope of starch and gluten. The investigations which have been carried on upon the vitality of seeds appear to prove that, under favorable conditions, this life-germ may be maintained for centuries. Grains of wheat which had been found in the hands of an Egyptian mummy, germinated and grew; these grains were produced, in all probability, more than three thousand years since; they had been placed, at her burial, in the hands of a priestess of Isis, and in the deep repose of the Egyptian catacomb, were preserved to tell us, in the eighteenth century, the story of that wheat which Joseph sold to his brethren.

The process of germination is essentially a chemical one. The seed is placed in the soil, excluded from the light, supplied with a due quantity of moisture, and maintained at a certain temperature, which must be above that at which water freezes; air must have free access to the seed, which, if placed so deep in the soil as to prevent the sreamation of the atmosphere, never germinates. Under favorable circumstances,

life-quickening processes begin; the starch, which is a compound of carbon and oxygen, is converted into sugar by the absorption of another equivalent of oxygen from the air; and we have an evident proof of this change in the sweetness which most seeds acquire in the process, the most familiar example of which we have in the conversation of barley into malt. The sugar thus formed furnishes the food to the now living creation, which in a short period shoots its first leaves above the soil; and these, which, rising from their dark chambers, are white, quickly become green under the operation of light.

In the process of germination, a species of slow combustion takes place, and—as in the chemical processes of animal life and in those of active ignition—carbonic acid gas, composed of oxygen and charcoal, or carbon, is evolved. Thus, by a mystery which our science does not enable us to reach, the spark of life is kindled—life commences its work—the plant grows. The first conditions of vegetable growth are, therefore, singularly similar to those which are found to prevail in the animal economy. The leaf-bud is no sooner above the soil than a new set of conditions begin; the plant takes carbonic acid from the atmosphere, and having in virtue of its vitality, by the agency of luminous power, decomposed this gas, it retains the carbon, and pours forth the oxygen to the air. This process is stated to be a function of vitality; but as this has been variously described by different authors, it is important to state with some minuteness what does really take place.

The plant absorbs carbonic acid from the atmosphere through the under surfaces of the leaves, and the whole of the bark; it at the same time derives an additional portion from the moisture which is taken up by the roots, and conveyed “to the topmost twig” by the force of capillary attraction and another power called *endosmosis*, which is exerted in a most striking manner by living organic tissues. This mysterious force is shown in a pleasing way by covering some spirits of wine and water in a wine-glass with a piece of bladder; the water will escape, leaving the strong spirit behind.

Independently of the action of light, the plant may be regarded as a mere machine; the fluids and gases which it absorbs pass off in a condition but very little changed, just as water would strain through a sponge or a porous stone. The consequence of this is the blanching or *etiolation* of the plant, which we produce by our artificial treatment of celery and sea-kale—the formation of the carbonaceous compound called *chlorophyle*, which is the green coloring-matter of the leaves, being entirely checked in darkness. If such a plant is brought into the light, its dormant powers are awakened, and instead of being little other than a sponge through which fluids circulate, it exerts most remarkable chemical powers; the carbonic acid of the air and water is decomposed; its charcoal is retained to add to the wood of the plant, and the oxygen is set free again to the atmosphere. In this process is exhibited one of the most beautiful illustrations of the harmony

which prevails through all the great phenomena of nature with which we are acquainted—the mutual dependence of the vegetable and animal kingdoms.

In the animal economy, there is a constant production of carbonic acid, and the beautiful vegetable kingdom, spread over the earth in such infinite variety, requires this carbonic acid for its support. Constantly removing from the air the pernicious gases produced by the animal world, and giving back that oxygen which is required as the life-quickenning element by the animal races, the balance of affinities is constantly maintained by the phenomena of vegetable growth. This interesting inquiry will form the subject of another essay.

The decomposition of carbonic acid is directly dependent upon luminous agency. From the impact of the earliest morning ray to the period when the sun reaches the zenith, the excitation of that vegetable vitality by which the chemical change is effected regularly increases. As the solar orb sinks towards the horizon, the chemical activity diminishes: the sun sets—the action is reduced to its minimum; the plant, in the repose of darkness, passes to that state of rest which is as necessary to the vegetating races as sleep is to the wearied animal.

These are two well-marked stages in the life of a plant; germination and vegetation are exerted under different conditions. The time of flowering arrives, and another change occurs; the processes of forming the alkaline and the acid juices, of producing the oil, wax, and resin, and of secreting these nitrogenous compounds which are found in the seed, are in full activity. Carbonic is now evolved, and oxygen is retained, hydrogen and nitrogen are also forced, as it were, into combination with the oxygen and carbon, and altogether new and more complicated operations are in activity.

Such are the phenomena of vegetable life which the researches of our philosophers have developed. This curious order, this regular progression, showing itself at well-marked epochs, is now known to be dependant upon solar influences; the

"Bright effluence of bright essence incarnate"

works its mysterious wonders on every organic form. Much is still involved in mystery; but to the call of science some strange truths have been made manifest to man, and of some of these the phenomena must now be explained.

*Germination* is a chemical change which takes place most readily in darkness; *vegetable growth* is due to the secretion of carbon under the agency of light; and the processes of *floriation* are shown to involve some new and compound operation; these three states must be distinctly appreciated.

The sunbeam comes to us as a flood of pellucid light, usually colorless; if we disturb this white beam, as by compelling it to pass through a triangular piece of glass, we break it up into colored bands, which we call the *spectrum*, in which we have an order of chromatic rays as are seen in the rainbow of a summer shower. These colored rays are known to be the sources of all the tints by which nature adorns the earth, or

art imitates in its desire to create the beautiful. These colored bands have not the same luminating power, nor do they possess the same heat giving property. The yellow rays give the most **LIGHT**; the red rays have the function of **HEAT** in the highest degree. Beyond these properties, the sunbeam possesses another, which is the power of producing **CHEMICAL CHANGE**—of effecting these magical results which we witness in the photographic processes, by which the beams illuminating any object are made to delineate it upon the prepared tablet of an artist.

It has been suspected that these three phenomena are not due to the same agency, but that, associated in the sunbeam, **LIGHT**, producing all the blessings of vision, and throwing the veil of color over all things—**HEAT**, maintaining that temperature over our globe which is necessary to the perfection of living organisms—and a third principle, **ACTINISM**, by which the chemical changes alluded to are effected. We possess the power, by the use of colored media, of separating these principles from each other, and of analyzing their effects, a yellow glass allows *light* to pass through it most freely, but it obstructs *actinism* almost entirely; a deep blue glass on the contrary, prevents the premeation of *light*; but it offers no interruption to the *actinic* or chemical ray; a red glass, again, cuts off most of the rays except those which have peculiarly a *calorific* or heat-giving power.

With this knowledge we proceed in our experiments, and learn some of the mysteries of nature's chemistry. If, above the soul in which the seed is placed, we fix a pure, yellow glass, the chemical change which marks germination is prevented; if, on the contrary, we employ a blue one, it is greatly accelerated; seeds, indeed, placed beneath a cobalt-blue finger-glass, will germinate many days sooner than such as may be exposed to the ordinary influences of sunshine: this proves the necessity of the principle of *actinism* to the first stage of vegetable life. Plants, however, made to grow under the influence of such blue media present much the same conditions as those which are reared in the dark; they are succulent, instead of woody, and have yellow leaves and white stalks; indeed the formation of leaves is prevented, and all the vital energy of the plant is exerted in the production of stalk. The chemical principal of the sun's rays alone is not therefore sufficient; remove the plant to the influence of light, as separated from actinism, by the action of yellow media, and wood is formed abundantly; the plant grows most healthfully and the leaves assume the dark green which belongs to the tropical climes or to our most brilliant summers. Light is thus proved to be the exciting agent in effecting these chemical decompositions which already have been described; but under the influence of isolated light, it is found that plants will not flower. When, however, the subject of our experiment is brought under the influence of a red glass, particularly of that variety in which a beautiful pure red is produced by oxide of gold, the whole process of floriation and the perfection of the seed is accomplished.

Careful and long-continued observations have proved that in the spring, when the process of



germination is most active, the chemical rays are the most abundant in the sunbeam. As the summer advances, light, relatively to the other forces, is largely increased; at this season, the trees of the forest, the herb of the valley, and the cultivated plants which adorn our dwellings, are alike adding to their wood. Autumn comes on, and then heat, so necessary for ripening grain, is found to exist in considerable excess. It is curious, too, that the autumnal heat has properties peculiarly its own—so decidedly distinguished from the ordinary heat, that Sir John Herschel and Mrs. Somerville have adopted a term to distinguish it. The peculiar browning or scorching rays of autumn are called *parathermic* rays: they possess a remarkable chemical action added to their calorific one; and to this are due those complicated phenomena already briefly described.

In these experiments, carefully tried, we are enabled to imitate the conditions of nature, and apply at any time those states of solar radiation which belong to the varying seasons of the year.

Such is the rapid sketch of the mysteries of a flower. "Consider the lilies of the field, how they grow: they toil not, neither do they spin; and yet I say unto you, Solomon's in his glory was not arrayed like one of these."

Under the influence of the sunbeams, vegetable life is awakened, continued, and completed; a wondrous alchemy is effected; the change in the condition of the solar radiations determines the varying conditions of vegetable vitality; and in its progress those transmutations occur which at once give beauty to the exterior world, and provide for the animal races the necessary food by which their existence is maintained. The contemplation of influences such as these realizes in the human soul that sweet feeling which, with Keats, finds that

"A thing of beauty is a joy for ever;  
Its loveliness increasing, it will never  
Pass into nothingness, but still will keep  
A bower quiet for us, and a sleep  
Full of sweet dreams, and health, and quiet breathing.

\* \* \* \* \*  
"Such the sun and moon.  
Trees old and young sprouting a shady boon  
For simple sheep; and such are daffodils,  
With the green world they live in."

# POETRY.

The pleasure produced by poetry, if analyzed, will be found to consist of three elements: First, the pleasure derived from the excitement of our emotions; second, that derived from the play of the imagination; and third, that from the diction.

A poem should possess these three characteristics, and to whatever extent it comes short in any one of these, to that extent it is imperfect and defective. A poem occupying the highest place in the poetic art will exhibit these three excellencies.

There are some poems in the English language which exhibit some one of these excellencies in a very high degree. For instance, the *Endymion* of Keats and the *Alastor* of Shelley are written in remarkably pure poetic language. Indeed, several of the poems of these gifted men are specimens of poetic diction. They are

like jewellery, burnished, tasteful, and ornate. Other poems, again, excel in thought. Wordsworth, Milton, and Shakespeare fascinate in an eminent degree by their thoughts. Sir Walter Scott and Thomas Moore thrill and excite the reader by the perpetual play of the imagination.

Few poets have excelled in the three elements of poetic excellence. Burns and Byron have succeeded better, perhaps than any of their contemporaries. Campbell has elaborated his diction too much. Pollok, his by far too little. Wordsworth understood well the wonderful sorcery of style. Bryant is always careful of his style. Longfellow has succeeded better, probably, than any other living poet in marrying thought to appropriate language, especially in several of his smaller poems.

Some of the poets of the early part of the seventeenth century overlooked both thought and style, for the mere play of the fancy. Their writings are little perused. They are, in the firmament of song, what the summer lightning is, which shoots in zig-zag coruscations through the blue sky. In a poem, style and fancy may be sacrificed, but thought never. Thought is the soul of poetry. Measured language is not poetry; there must be thought in it—thought which stirs the soul of the reader as the voice of a trumpet at midnight rouses the sleeping inhabitants of a city. Thought is the soul of poetry. Nor should any person attempt the sublime art, unless his own soul has been moved by the thoughts which he embodies in it.

The following story has something in it which makes the reader sad. The diction is deficient in polish, and yet there are thoughts in it which move the soul:

## THE DYING CHILD AND THE FLOWERS.

### I.

"Where are the flowers?" the dying child exclaimed;  
Winter had come and sowed the snow on hill  
And vale. "Where are the flowers?" the dying child  
Did ask, as she looked through the window,  
The last time, on the earth. For months she lay  
A dying, but on this cold Sabbath morn  
She bade them lift her from her little couch,  
And take her to the window, that her eyes  
Might see once more the lawn, the trees, and flowers:  
The winter's wind raved round the dwelling,  
And all the landscape lay like a corpse wrapt  
In the winding sheet of driven snow.  
"Where are the flowers, mamma? are they all dead  
Before me. Say, mamma, where are the flowers."

### II.

As soon as that young mother's heart was calmed,  
And she had wiped the salt tears from her face,  
"The flowers," she said, "are only sleeping now:  
The spring will come full soon, and wake them up;  
Thn flowers will come again, my blessed child;  
The snow will pass away, the chilly earth  
Grow warm; the nipping frost and sweeping rains  
Will soon be o'er. The flowers will come again;  
My little Mary soon will see the flowers."

### III.

To this the dying child replied in calm  
And thrilling tones: "Mamma, I know me where  
The flowers have gone. The angels love the flowers,  
And they have taken them to holy heaven:  
Earth is too cold for flowers; they always die;  
And they have taken them to their own gardens,  
Where all the flowers are made immortal.  
Mamma, the angels have come back for me,  
To take me where the pretty flowers ne'er die.  
The Saviour loveth flowers and children:  
Come soon, mamma, into the heavenly world,  
Up where the angels and the flowers aye dwell."

—Popular Educator.

## CROWTHER THE BOTANIST.

[The following Biographical notice will be perused with interest by many of our readers. We had a personal acquaintance with the subject of it, and can vouch for its correctness. Some years since, we knew several similar characters among the working classes of Manchester, and its vicinity, men who though socially in a very humble condition, labouring incessantly for their daily bread, yet found time for forming an acquaintance with the several departments of natural science, and even in some instances of enlarging their boundaries. The hand loom weavers—although the worst remunerated of any of the manufacturing operatives—have in numerous instances been distinguished by an enthusiastic fondness for horticulture and natural history. We have known some of these men, after a hard week's work, walk thirty or forty miles on the Sunday, in search of Botanical or Geological specimens. What a lesson does such a profound devotion to scientific pursuits, read to those who are blessed with leisure and ample means! If our young people would emulate such examples, and eschew the senseless and but too often demoralising Novel, a firmer and higher tone of feeling would soon pervade the community. The flood of inferior books which the press is daily pouring forth, in the shape of tales and romances, forms one of the characteristics of the present age, and presents several serious difficulties to the progress of a healthy and higher civilization.—Ed.]

James Crowther, a porter at Manchester, England, furnishes one of the most extraordinary instances on record of devotion to science in humble life. He was born at Manchester, and at the age of nine years was employed as errand-boy in connection with one of the factories, like most of the children of the poor in those great seats of industry. He had been sent to school during some short period, and had made such good use of his time that he had learned to read with sufficient ease and correctness to acquire some literary taste; but from his earliest years he exhibited the utmost fondness for natural history, and above all for botany. Manchester and its environs have always numbered amongst its working-men a considerable number of amateurs in science, if we may use the expression, and the fields in the neighbourhood are frequented by them for the purpose of collecting specimens.

Crowther made the acquaintance of some of these, and remained upon intimate terms with them during his life-time. Thirty or forty persons belonging to the town, and who were fond of botanizing, met every week during spring and summer to exhibit the specimens they had collected, and communicate to each other the result of their observations. Crowther, however, being

employed as a porter during the day, could only devote the night to his favorite study. He might often be seen in the fields about daybreak, where he continued busily engaged until the approach of the hour of labor compelled him to hasten home. While thus employed he frequently ran great danger of being arrested by gamekeepers, watchers, and others, who could not imagine that a man in his rank of like could be roaming through the fields at such an hour for any purpose but a mischievous one. Upon one occasion he was found botanizing upon the property of a Mr. Egerton, and was taken into custody, charged with fishing in his preserves, and was brought up before a magistrate. The proofs appeared sufficiently plain. He was armed with a long pole with a sharp crook and a net at the end. It was in vain that the botanist protested his innocence of the design imputed to him, and explained that his weapon was intended for no other purpose than the pulling up of aquatic plants and dragging them ashore; and, would in all probability have paid for his imprudent devotion to science by being immured in prison, had not Mr. Egerton become convinced of the truth of his story, and given direction to his gamekeepers not to prosecute him nor molest him in his excursions in future. His friends tell many stories of the delight which the discovery of a plant previously unknown to him caused him even in old age. He never seemed in the least degree affected by cold or fatigue. One day he persuaded one of his friends to accompany him to a lake, on the banks of which he stated he had seen a rare plant; but on their arrival they found to Crowther's great chagrin, that the water's had risen so much in consequence of the heavy rains that the object of their search was no longer to be seen. His friend was about to go away dissatisfied, when he heard a plunge, and turning round, he found that Crowther had disappeared. In a few minutes he reappeared, and swam ashore, carrying the specimen in his mouth.

Crowther's name has not been entirely unknown to fame. Sir J. E. Smith, Dr. Hull, and Larmeletti speak of him in terms of the highest praise, and of the services he had rendered to science by his valuable collection of mosses and lichens. He also devoted considerable attention to entomology, and had in his possession a large collection of insects, which he classified himself with great care: but he was obliged to dispose of them by degrees, in consequence of the pressure of poverty, as he had a wife and a large family. His innate modesty always kept him from seeking either assistance or patronage, and he consequently remained all his life the porter of a warehouse. For a long time he received only sixteen shillings a week of wages, and afterwards twenty shillings, the whole of which he placed in his wife's hands, reserving to himself nothing but the proceeds of any extra jobs he might pick up in the town, which he spent in furthering his botanical pursuits. Age and infirmity having rendered him no longer fit for the duties of his situation, he was obliged to subsist during the latter years of his life upon a pension of three shillings a week allowed him by the Society for the Encouragement of Needy Men of



Science. This was all Manchester could do for a philosopher in humble life—the great emporium of commerce, which spends thousands without hesitation upon the uncertainties of political agitation. Crowther died in 1847, at the age of seventy-seven years, leaving all his children in a position as humble as his own. When he was dead, the world found out that he was a great man, and spent seven guineas in burying him and building a tomb over him, by way of compensating him for the misery and destitution of his old age!

#### THE NEW ENGLISH CRYSTAL PALACE.

The Crystal Palace at Sydenham begins to cast before it a very distinct shadow of the magnificence to come. Those who have availed themselves of the privilege, now open to all, of inspecting the works, on payment of a five shilling fee, must have been sufficiently impressed with the thoroughness with which the business is being done. They must have felt, if not said to themselves, "This promises to be, not only the finest exhibition in the world, but the finest exhibition possible, at the world's present stage of progress." In magnitude and variety, the display will certainly extend to the extreme verge of the practically comprehensible. To have seen the old exhibition thoroughly, would have required no small fraction of the leisure of a lifetime; but the Sydenham display will be one which, if numerically more finite, will yet demand far more time for its entire comprehension, on account of the vastly greater average interest of the objects displayed. These objects will be precisely those which are fitted to be of the best and deepest interest to the greatest possible number of persons. Those of the fine arts which are capable of being put under contribution for exhibition will be represented with an extent and completeness hitherto unknown. Facsimiles of all the noblest sculptures which ancient and modern times have produced will be assembled in one spot. Architectures—Egyptian, Greek, Arabic, and Gothic—will not only be represented, but re-produced, "life-size," in all their more notable forms, and with practical illustrations of the popular mysteries of polychromy, hypæthral roofs, honey-comb vaulting, ancient frescoes and arabesques, &c.; and furthermore, the main building itself will be the first and most glorious specimen of an entirely new style of architecture of singular beauty, and of great, though, as yet, very imperfectly foreseen powers of adaptation to our peculiar modern wants. Mr. Ruskin, who said of the architecture of the old Crystal Palace, that

The earth has bubbles as the water hath,  
And this is of them;

will be found to have committed a memorable blunder; and he will doubtlessly be not slow to retract it when he beholds, from the lovely western valley, the terraced hill blazing with millions of flowers and *jets d'eau*, and crowned with the lofty transepts, vaulted naves, and soaring towers of the new cathedral of the arts and sciences. If, in the presence of so poetical a sub-

ject, we may be permitted to express ourselves by a poetical figure, our old stone and brick architecture may be said to have died, like Goethe, calling for "more light," and to have arisen, in the present form, with the full enjoyment of the desiderated brilliance.

The art of nature will be represented side by side and hand in hand with the art of man, and in the same order—that is, historically. The marvels of Karnak and Nineveh, with their sphinxes and bulls as big as the Trojan horse, will be matched with the production of the "heroic ages" of nature—the vast mud lake, the dreary shore of the præ-Adamite isle, with its rank cover of ferns, and its mighty denizens, the Ichthyosaurus, the Mastodon, the Plesiosaurus, and the Megatherium, as large as life, and larger than credible to the modern eye. The race even of man will be called upon to render a full account of itself, and the halls of the Sydenham Palace will present to our astonished senses every variety of the posterity of Shem, Ham, and Japhet, from the "pure Caucasian" to the Bosjesman, and from the giants of Patagonia to the Aztec Lilliputians, together with the physiology of these personages, we shall be enabled to contemplate their main attainments or shortcomings in the useful arts; especially the useful art of war, of which the implements will no doubt appear to have constituted the chief staple products of nine varieties out of ten.

After the men among their war-tools, will come the beasts, birds, and fishes of modern times, *i. e.*, the last six thousand years or so—with their favorite botany: monkeys in their real skins climbing up the parasite bound columns—of the palace; bats and vampires clinging to its leafy roofs; lions and their prey coursing through the shadowy and everlasting summer of the aisles; dodos and penguins squatting in appropriate recesses; marvellous molluscs taking their tranquil pleasure in crystal tanks; and fishes disporting themselves, secure from every danger, unless, perhaps, that which was contemplated in the famous rhyme which described them as sweating and swearing under "the sun's perpendicular heat."

The winter garden will, of course, put all other winter gardens in the world to blush, since the advantages under which it will be created were never yet even distantly approached; and the English summer garden, outside, already shows its intention of surpassing everything in the way of gardens either in fact or fable, from the hanging gardens of Babylon to the stately avenues and terraces of Versailles.

Full advantage of the opportunity is to be taken for giving a system of illustrations of geology upon the natural scale; and, in connection with this department, we are to have complete exemplifications of the processes of mining, quarrying, well-sinking, and tunnelling.

Over and above all this, which formed no part of the old Exhibition, we are to have all that was most significant in the old Exhibition selected and systematised in the new.

A complete and intelligible collection of "raw produce," mineral, vegetable, and animal, is to be found under the same roof with the "Court of

Inventions," in which models and working illustrations of all that is most valuable in human ingenuity will be displayed, together with the results in objects of necessity, convenience, and taste. Were we not right in saying that the new Crystal Palace promises to be the best exhibition at present possible? It would certainly be difficult to add any new element to those now enumerated without danger of diminishing the total effect by making it collectively too vast to be the subject of contemplation.

Although there is every reason to suppose, from the present appearance of the works, that the Palace will be sufficiently advanced by next May to be thrown quite open to the public, it is not to be supposed that the Exhibition can be perfected by that time. The Winter-garden and the departments of Manufactures and Zoology will require a long time for their completion; but whatever may be the incompleteness of the Palace next May, the public may rest assured that, in general effect, the display will almost surpass our present conception, and that, in matter of detail, there will be far more than can be inspected in one season by any person, with only a reasonable amount of sight-seeing time on his hands.—*Daily News.*

#### THE MOCKING BIRD OF AMERICA.

The American Mocking Bird is the prince of all song-birds, being altogether unrivalled in the extent and variety of his vocal powers; and, besides the fulness and melody of his original notes, he has the faculty of imitating the notes of all other birds, from the humming-bird to the eagle. Pennant states that he heard a caged one imitate the mewing of a cat, and the creaking of a sign in high winds. Barrington says, his pipes come nearest to the nightingale of any bird he ever heard. The description, however, given by Wilson, in his own inimitable manner, as far excels Pennant and Barrington as the bird excels its fellow songsters.—Wilson tells us that the ease, elegance and rapidity of his movements, the animation of his eye, and the intelligence he displays in laying up lessons, mark the peculiarity of his genius. His voice is full, strong and musical, and capable of almost every modulation, from the clear and mellow tones of the wood thrush to the savage scream of the bald eagle. In measure and accents he faithfully follows his originals, while in strength and sweetness of expression he greatly improves upon them. In his native woods, upon a dewy morning, his song rises above every competitor, for the others appear merely as inferior accompaniments. His own notes are bold and full, and varied seemingly beyond all limits. They consist of short expressions of one, three, or at most five or six syllables, generally uttered with great emphasis and rapidity, and continued with undiminished ardor for half an hour at a time.—While singing he expands his tail, glistening with white, keeping time to his own music, and the buoyant gaiety of his action is no less fascinating than his song. He sweeps round with enthusiastic ecstasy; he mounts and descends, as his song swells or dies away; he bounds aloft with the celerity of an arrow, as if to recover or to recall his

very soul, expired in the last elevated strain. A bystander might suppose that the whole feathered tribe had assembled together on a trial of skill—each striving to produce the utmost effort—so perfect are his imitations. He often deceives the sportsman, and even birds themselves are sometimes imposed upon by this admirable mimic. In confinement, he loses little of the power or energy of his song. He whistles for the dog; Ceaser starts up, wags his tail, and runs to meet his master.—He cries like a hurt chicken, and the hen hurries about with feathers on end, to protect her injured brood. He repeats the tune taught him, though it be of considerable length, with perfect accuracy. He runs over the notes of the canary and the red bird with such superior execution and effect, that the mortified songsters confess his triumph by their immediate silence. His fondness for variety, some suppose, injures his song. His imitation of the brown thrush is often interrupted by the crowing of cocks; and his exquisite warblings after the blue bird are mingled with the screaming of swallows and the cackling of hens. During moonlight, both in the wild and tame state, he sings the whole night long. The hunters in their nocturnal excursions, know that the moon is rising, the instant they hear this delightful solo.

After Shakespeare, Barrington attributes, in part, the exquisiteness of the nightingale's song to the silence of the night; but if so what are we to think of the bird, which in the open glare of day, overpowers and often silences all competition? The natural notes of the American mocking-bird are similar to those of the brown thrush.—*Audubon.*

#### ENTERPRISE.

The *Paris Star* of the 24th ult., states that Messrs. Robert and William Gordon, farmers near Paris, have just imported from England one Ram and eleven Ewes, pure Southdown breed, purchased from Mr. Rigden, of Hove near Brighton, a gentleman who took the first prize for this description of sheep, at the Royal Agricultural Shows of 1851 and 1852, and at the Gloucester Show in July last. After a long passage of ten weeks they reached Paris on Friday last. Mr. R. Gordon has also selected from the flock of Mr. Douglass, of Athelstaneford, Scotland, one Ram and eleven Ewes, pure Leicester breed. These have not yet arrived. Mr. Gordon has also sent out some Wheat and Oats for seed, from Mr. Lawson's seed store in Edinburgh, seedsman to the Royal Agricultural Society of Scotland. Such enterprise is truly praiseworthy. The expense attending this importation has, no doubt, been great, but the Messrs. Gordon will speedily realize in an improved flock an ample return for all their outlay.

The man who loses half an hour, worth one shilling, and wears his waggon and team equal to two shillings more, by going over a long and rough road, to avoid a plank road toll of sixpence, loses exactly two shillings and sixpence by the operation. This does not apply to the loaded waggon, where the loss is much greater from the smaller load.



## SEWING BY MACHINERY.

A machine, of American invention, has been introduced into this country, by Mr. Darling of Glasgow, (at whose manufactory numerous examples of it are now in operation,) which carries the mechanical principle into a fresh department of human labour—namely that of common hand sewing. The patent sewing machine promises to produce a revolution in the seamstresses as great as the power loom effected in that of the weaver. The machine is extremely simple in construction, but it is not very easy to give such an explanation of it as would be intelligible to the general reader, or even indeed to those familiar with the ordinary technical phrases of mechanics. To be understood it must be seen, and even then, so eleve is its working, that it requires a sharp eye to follow its evidently simple, yet amazingly expert movements. Its framework is cast metal, but it must not be imagined to be a huge, clumsy, affair like a hand-loom; on the contrary, it occupies little more space than two cubic feet, and might stand on the top of a ladies work table. The right hand of the worker turns a small wheel, which puts in operation two needles, one an upright one, the other a sort of semi-circular one; and on a strong tabular surface, at the left hand extremity of which those two needles work—the upright above and the circular under—the cloth is laid with the left hand, and propelled between the needles as the machine proceeds with its stitching. This it does with amazing rapidity, running off, in something less than a minute, a line of stout sewing which an ordinary seamstress would scarcely overtake in the course of half an hour. Line after line in traces of unabating celerity and ease, till the two bobbins which supply the thread to the double needle machinery be wound off. Delicate in some respects as the machinery is, we are told, it is little liable to entanglements or derangement of any kind; and any breakage of thread that may occasionally occur is rectified with very little loss of time. Again, the machine can be readily adapted to be driven by the foot of the worker, after the fashion of a turning lathe, and in sowing other than simple straight lines—for the machine can stitch in circles or zig zag, or any other way that may be desired; this is a great advantage, and it leaves both hands of the worker free to manage the cloth. This mode of working also secures a much higher rate of speed. By the hand the machine may be driven at the rate of 500 stitches per minute, by the foot at nearly twice that rate. Nor must it be supposed that the work executed at this extraordinary rapid rate, is loose, irregular, “slop” sort of work. On the contrary it is strong, close sewing, beautiful, regular, and altogether such as it would require a very firm and well practised hand to equal. We do not wish to exaggerate the far passed period of probation, that it is in very extensive operation in America, that such trial as it has had in this country has been extremely successful and that already its inventors are improving on it and adapting it still more carefully and completely to its end. Looking at it when at work, it is impossible to resist the conclusion that it is destined completely to supersede all

ordinary plain hand sewing, and that such sewing as an occupation for either men or women, tailors or seamstresses, is gone for ever.—*Glasgow Chronicle.*

## CAUSES OF INDIGESTION.

Doctor Wieting, when lecturing at the Brooklyn Institute, lately, described the manner in which persons destroy their stomachs, and produce indigestion and dyspepsia. A gentleman sits down to dinner, and partakes of a multitude of dishes, each seemingly prepared for the purpose of coaxing the stomach to accept more than it can digest. Being completely loaded, it sets to work to agitate the heap, and put it through the process of digestion. The gentleman then starts for home and sees some seductive looking apples on a stand, which he thinks he should like to eat. He purchases a few and commences to gulf them down. “Halloo!” says the stomach, looking up in alarm, “what are you about up there? I have more work than I can attend to already.” However, remonstrance is in vain, and, with a gripe or two, the stomach goes to work as before. The gentleman next meets with a friend; a glass of wine, a brandy smash, or some other liquid compound, is gulped down, aided by some tobacco fumes. Supplies are lowered into the stomach like bales of cotton into the hold of a Mississippi steamer, until the organ, wearied and overburdened, gives up in disgust, and leaves the mass to indigestion, dyspepsia, and its train of accompanying evils. Thus the harmony of the system is destroyed, which might have been prevented by a little prudence and self-denial.

## THE SHEPHERD’S DOG.

Without the shepherd’s dog the whole of the mountainous land in Scotland would not be worth sixpence. It would require more hands to manage a flock of sheep, gather them from the hills, force them into houses and folds, and drive them to markets, than the profits of the whole stock would be capable of maintaining. Well may the shepherd, then, feel an interest in his dog. It is indeed he that earns the family bread, of which he is content with the smallest morsel. Neither hunger nor fatigue will drive him from his master’s side; he will follow him through fire and water. Another thing very remarkable is, the understanding these creatures have of the necessity of being particularly tender over lame and particular sheep. They will drive these a deal more gently than others, and sometimes a single one is committed to their care to take home. On these occasions they perform their duties like the most tender nurses. Can it be wondered at, then, that the colley should be so much prized by the shepherd; that his death should be regarded as a great calamity to a family, of which he forms, to all intents and purposes, an integral part; or that his exploits of sagacity should be handed down from generation to generation, and form no small share of the converse by the cozy ingle on long winter nights.

Charity, like the sun, brightens every object on which it shines; a censorious disposition casts every character into the darkest shade it will bear.

## HOW TO DRY PEACHES.

Take those of the best quality, just as they are ripe enough to eat, halve them, remove the stones, and sprinkle over them, in the hollow from which the pit was taken, a little nice sugar; dry them in a brick oven after the bread, &c., is withdrawn.

They are far better than if dried in the sun, retaining their aroma and flavour, and besides are totally free from insects. Prepared in this way, from peaches fully ripe, they need no cooking, but are simply soaked in cold water. All the sugar they require (ranging of course with the variety) is added while drying. Peaches thus dried and prepared, are only inferior to the fresh fruit, of which they retain the flavour in a remarkable degree. If you prefer, take them not quite so ripe, and peel the fruit, but the flavour is not so good as when fully ripe, and is dissipated more in the process of drying.

## WONDERFUL GEOLOGICAL CALCULATION.

In a paper read by Sir Charles Lyell, before the Royal Society in London, on the coal fields of Nova Scotia, he entered into speculations respecting the solid matter contained in the carboniferous formation of that country. He believes that it was once a delta like that of the Mississippi, and that the formations were produced by river inundation drifts. The average thickness of the whole of the coal measures is three miles, and the area, including the fields of New Brunswick, &c., may comprise 36,000 square miles, or 108,000 cubic miles, but taking the half of this, it would be 54,000 cubic miles of solid matter. It would take more than two millions of years for the Mississippi River to convey to the Gulf of Mexico an equal amount of solid matter at the rate of 450,000 cubic feet per second, as calculated by Mr. Forshey.—This is a subject for deep reflection and examination by all Biblical geologists especially. Sir Charles Lyell found fossil reptilian remains, and a land-shell in the interior of a fossil tree in a Nova Scotia coal field.

## GRAFTING WAX.

We made some remarks last week, in relation to cutting and preserving scions. We will give this week, a recipe for making the best kind of *grafting cement*. Take three parts of the best quality of rosin; two parts of bees-wax; and one part of tallow; melt them thoroughly together, and pour the composition while hot into cold water, and then work it like shoemaker's wax, till it will spread as thin as paper, or draw out as fine as gosamer. Should the rosin precipitate when cooling in the water and remain in the wax in small lumps, it must be melted over and worked again. In such case care must be taken that no water remains in the vessel that the composition is melted in, as water will remain at the bottom, and when the cement becomes heated to a certain temperature, the operator will witness a rather unpleasant experiment upon the expansive power of steam.

In rather cold weather, a little more tallow than in the above proportion may be added, and the cement will work very well, and in very warm weather a little more rosin will harden the wax, without material injury to its good prop-

ties. But for all seasons and all kinds of weather, we have never found any kind of grafting wax, that worked as well as wax made according to the above proportions. In cold weather, we keep our wax in warm water, in order to have it work well,—and in very warm weather it is necessary to keep it in cold water. Care should be taken to procure pure bees-wax for making cement.—Much of the bees-wax that is purchased in the market is adulterated with tallow; such may be detected, by placing it in a temperature that will melt the tallow and not the wax.—*Keene (N. H.) News.*

## PLANTS IN ROOMS.

The reason why plants fade so soon, is because due attention is not paid to them. The mere supplying with water is not sufficient. The leaves should be kept perfectly clean. "If as much washing were bestowed, in London," says Dr. Lindley, "upon a pot plant as upon a lap-dog, the one would remain in as good condition as the other. The reasons are obvious. Plants breathe by their leaves; and if their surface is clogged by dirt, of whatever kind, their breathing is impeded or prevented. Plants perspire by their leaves; and dirt prevents their perspiration. Plants feed their leaves; and dirt prevents their feeding. So that breathing, perspiration, and food, are fatally interrupted by the accumulation of foreign matters upon leaves. Let any one, after reading this, cast an eye upon the state of plants in sitting-rooms or well-kept greenhouses; let them draw a white handkerchief over the surface of such plants, or a piece of smooth white leather, if he desires to know how far they are from being as clean as their nature requires."

## TRANSPLANTING EVERGREENS.

A good article on this subject urges (what we have long since endeavoured to enforce) "*that the roots while out of the ground, should be moist—that they should never for a moment even become dried during the process of transplanting.*" Hence a rainy day is recommended, in all cases, and especially where the roots are denuded. A few experiments are given. A long screen of *Arbor-vitæ* were set out in a stormy week, with the sod on. Six were set aside in a tub of water—four were left exposed to a drying wind. These four only died, out of two hundred and ten. The six, after three weeks neglect in the water, all survived. Again, fifty Norway Spruces, were set out on a moist day. One, by mistake, was left, and received a few hours of sunshine—this only died. We have succeeded well with some sorts, brought long distances, by insisting on the instant immersion of the roots in water, as soon as up—packing in wet moss, kept soaked with water—the roots plunged, in mud as soon as received, and *laid in*—and again mudded and the earth well settled with water, when transplanted. Removing plenty of earth on the roots—an infallible mode,—besides preserving all small fibres, keeps the roots constantly moist.—*Cultivator.*

## TO HEAD CABBAGES IN WINTER.

"Head him or die," was the vow of a politician; we forget which he did; but for us farmers the cabbages might as well die as forget to head.



A plan that never fails to cause a cabbage, that has the least curl in the inner leaves, to head during the winter—and a very good way to keep headed cabbages through the cold winter, is the following which we have tried with success.

Select a suitable spot in a garden or field, six feet in width, of any devised length, free from standing water; run a furrow the proposed length of your bed and throw a back furrow upon it. This double furrow will form a *side wall* of your cabbage house. In the trench stand your cabbages on their roots leaning towards the furrow at an angle of forty or forty-five degrees. Let the next furrow be thrown upon the roots and stalks of the cabbages, and another row be placed in the trench made by the second furrow; thus proceed until your six feet of width is planted, then let the last furrow be a double one—making the other side-wall about the height of the cabbage-head. Through the whole length of the middle of the patch lay rails lengthwise, supported by crutches, at a height of about two feet from the cabbages; this will form the ridge of the cabbage house. Lay light brush-wood from the side walls to the ridge-pole; then throw on salt hay, or bog hay, or straw two inches in depth. As the cold weather advances throw on dirt until you have a depth of say six or eight inches—or even more, when the winters are severe, and finally spank the dirt roof with the flat of a spade, until it will shed the rain. Fill up the two ends of your house in the same manner, leaving only small air-holes of a foot or two diameter, which may be closed with hay, and opened occasionally on a fair day. The length of the house should be on a north and south line.

In the early spring you will find your most unpromising plants have heads of their own; and all be thriving and fresh. Try it once, and you will try it ever afterwards.—*Journal of Agriculture.*

#### SHELTER YOUR MANURES.

"In the preparation of farm-yard dung," says Nesbitt, "there are two or three points worthy to be observed. The first is, that many of these substances are soluble. Now, the common way of preparing farm-yard dung everybody is acquainted with; a large mass of straw and excrement is allowed to rot in the midst of a quantity of water, where, instead of a genial heat being produced, it is washed by the water, which, saturated with soluble matter, is allowed to run away, as if the cleaner the straw, the better the manure. Now, it so happens that every one of these substances carried away is the most valuable, in fact, only the insoluble and most worthless are left behind. A quantity of dung thus exposed will lose its potash, its soda, the greater part of its ammonia and its soluble salts of lime, all of which, with very little care, could have been preserved, to the great advantage and profit of the farmer."

Agriculture, the original employment of man, is perhaps, if we except the clerical profession, the best adapted to preserve the morals, train the feelings, and raise the heart to the great First Cause.

## EDITOR'S NOTICES.

HIBERNICUS in our next.

#### EXHIBITION OF THE LOWER CANADA AGRICULTURAL ASSOCIATION.

We beg to remind our readers that this important exposition of Lower Canadian industry, will take place at Montreal on the 26th, 28th, 29th and 30th of September. Upper Canadians may compete for prizes, which amount in the aggregate to £1,500. Prize Lists can be obtained of the Secretary of the Board of Agriculture, in this city.

#### THE NEW YORK STATE AGRICULTURAL SOCIETY

Will hold its annual Fair at Saratoga Springs, Sept. 20th, 23rd, and will doubtless maintain the high position which it has for several years occupied.

#### TORONTO HORTICULTURAL SOCIETY.

The third Exhibition of this Society will be held on Thursday, the 15th of September, in the beautiful grounds of the Old Government House, on King Street, in this city. The premiums offered on this occasion, amount to the handsome sum of £100, and may be competed for by residents in any part of Canada. We are happy to see this young Society already putting forth most vigorous energies, and wish it most heartily a long career of increasing prosperity.—All who feel any interest (and who does not?) in Horticultural pursuits, ought at once to enroll themselves Members of this promising Society.

#### TOWNSHIP OF WESTMINSTER FALL SHOW.

The Westminster Society's Fall Show will be held on the 22nd day of September next ensuing, at Mr. Francis Nichols, 4th Concession, Lot No. 15.

THOMAS FLEMING.

Secretary.

#### STATE FAIRS, 1853.

New York, at Saratoga, .....	Sep <sup>r</sup> .	20, 21, 22, 23
Michigan, at Detroit, .....	"	28, 26, 30
Vermont, .....	"	13, 14, 15
Pennsylvania, at Pittsburgh,....	"	27, 28, 29
Kentucky, at Lexington, .....	"	13 to 17
Ohio, at Dayton, .....	"	20 to 24
New-Hampshire, Manchester, ..	Oct.	5, 6, 7
Maryland, .....	"	25, 26, 27, 28
Illinois, at Springfield, .....	"	11, 12, 13, 14
Indiana, at Lafayette, .....	"	12, 13, 14
North Carolina, at Raleigh, ....	"	18
Missouri, .....	"	3 to 7
Wisconsin, at Watertown, .....	"	4 to 7
Virginia, at Richmond, .....	Nov.	1, 2, 3, 4
Delaware Horticultural Society, at Wilmington, .....	Sept.	14, 15
Lower Canada Board of Agriculture, Annual Exhibition, .....	Sept.	27 to 30
Upper Canada, .....	Oct.	4 to 7
Southern Central Agricultural Society, Augusta, Georgia, ...	"	17 to 20
South Western Association, Louisville, Kentucky, .....	"	11 to 16
American Institute, .....	"	19, 20, 21

## Poetry.

## THE THRUSH'S NEST.

A SONNET, BY JOHN CLARK, THE NORTHAMPTONSHIRE PEASANT.

Within a thick and spreading hawthorn bush,  
That overhung a mole-hill large and round,  
I heard from morn to morn a merry thrush  
Sing hymns of rapture, while I drank the sound  
With joy; and oft, an unintruding guest  
I watched her secret toils from day to day;  
How true she warped the moss to form her nest,  
And model'd it with wool and clay,  
And by-and-by, like heath-bells bright with dew,  
There lay her shining eggs, as bright as flowers,  
Ink-spotted over, shells of green and blue;  
And there I witnessed, in the summer hours,  
A brood of nature's minstrels chirp and fly,  
Glad as the sunshine and the laughing sky.

## THE RICH MAN AND THE BEGGAR.

A beggar boy stood at the rich man's door—  
"I am houseless and friendless, and faint and poor,"  
Said the beggar boy, as the tear drop rolled  
Down his thin cheek, blanched with want and cold.

"Oh! give me a crust from your board to-day,  
To help the beggar boy on his way!"  
"Not a crust nor a crumb," the rich man said,  
"Be off, and work for your daily bread!"

The rich man went to the parish church—  
His face grew grave as he trod the porch—  
And the thronging poor, the untaught mass,  
Drew back to let the rich man pass.

The service began—the choral hymn  
Arose and swelled through the long aisles dim;  
Then the rich men knelt, and the words he said  
Were—"Give us this day our daily bread!"

## CANADIAN DEPARTMENT.—CRYSTAL PALACE.

The following letter has been received by Mr. Carpenter, of Townsend, County of Norfolk. Mr. Carpenter is the gentleman, who, last year, obtained the Canada Company's Prize of £25, for the best 25 bushels of wheat, exhibited at the Provincial Exhibition:—

New York, 9th August, 1853.

SIR,—Your Specimen of Wheat here, has excited unqualified admiration, and I have hourly applications for small samples to bring the applicants into seed. With one exception I have refused this. Those samples would sell at *so much* per ounce. If you think proper I shall sell samples to the United States Farmers, and hold the proceeds for your use. If you do not wish this, pray notify your views to me.

I am accredited Agent here, from Lower Canada and known in that capacity by Mr. Thompson, of Toronto.

In the absence of Mr. Holwell, (Commissioner,) I am in charge of the products of both Provinces.

I am, Sir, your Ob't. Serv't.,  
ROBERT POOBEE.

Mr. J. B. Carpenter,  
Townsend, C W.

## ADVERTISEMENTS.

## PAIGE'S THRASHING MACHINES!

FARMERS who desire to obtain a first rate Machine, which, with *less than half* the number of horses, and *half* the number of hands will thrash as much grain in a week, as one of the cumbersome eight horse-powers, should supply themselves with Paige's celebrated machine. Terms easy. For sale at the Office of the *Agriculturist*, Toronto.

August 3, 1853.

IMPORTANT TO  
BREEDERS OF STOCK.

THE Subscriber offers for sale Two Thorough Bred Short Horn *DURHAM BULL CALVES*, one 20 months old, a beautiful Roan Colour, splendid proportions, a descendant of the much celebrated "*Belted Will*" of England—the other about two months old, white, of unequalled Symmetry and beauty, and is a descendant of "*Belted Will*," his Dam was got by "*Bellville*," the Champion of England, Scotland and Ireland, and was imported to this Province in 1851, and the first of Mr. Hopper's, celebrated herd, ever brought into Canada.

ALSO:

Two other Calves of the same unequalled breeding 3 weeks old.

Satisfactory certificates of pedigree will be furnished. For further particulars application may be made to

RALPH WADE, SEN.

Spring Cottage, near Port Hope, Canada West.

June, 22nd 1853.

3-m.

BUREAU OF AGRICULTURE,  
QUEBEC, 28th May, 1853.

HIS EXCELLENCY THE GOVERNOR GENERAL has been pleased to appoint

Messrs. Whitman &amp; Wheelock,

OF No. 100 FRONT STREET, IN THE CITY AND  
STATE OF NEW YORK,

To be the Agents to Receive and Bond, or Pay Duties on all such Goods as may be sent from Canada to the approaching INDUSTRIAL EXHIBITION AT NEW YORK.

## WANTED,

A FEW DECEMBER Nos. of the "*AGRICULTURIST*" for 1852. Subscribers who can spare any of the above Nos. will be paid by sending them to this Office.

## The Canadian Agriculturist,

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, to whom all communications are to be addressed, is published on the First of each month by the Proprietor, William McDougall at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

## TERMS.

SINGLE COPIES—One Dollar per annum.

CLUBS, or Members of Agricultural Societies ordering 25 copies or upwards—*Half a Dollar each Copy.*

Subscriptions always in advance, and none taken but from the commencement of each year. The vols. for 1849-'50-'51, at 5s. each, bound.

N. B.—No advertisements inserted except those having an especial reference to agriculture. Matrons, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.



# THE CANADIAN AGRICULTURIST, AND Transactions

OF THE  
BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. V.

TORONTO, OCTOBER, 1853.

NO. 10

## POINTS OF DIFFERENT BREEDS OF CATTLE.

The New York State Agricultural Society has issued the following system of estimating the relative value of the various points of several distinct kinds of cattle. It is a subject of growing importance in this country, and one that is confessedly surrounded by many difficulties.—We can hardly expect our readers to agree with every thing contained in the subjoined paper; but most of them will look upon the information it contains as highly useful and suggestive to all breeders and judges of cattle; and for the benefit of such we are induced to publish it.—*Editor.*

### POINTS OF EXCELLENCE IN CATTLE.

*Adopted by the New York State Agricultural Society, for the guidance of the Judges at their Annual Fairs.*

The numbers affixed to the points described form the *maximum* that is to be allowed for each; and in proportion as the animal under examination is deficient in any point, so will the Judges decrease the number, even should nothing be allowed for that point.

Points which are characteristic, and therefore common to a *breed*, though very valuable in themselves, are marked comparatively low, because they are easily obtained and demand but little skill or attention on the part of the breeder: nevertheless, an animal not possessing the characteristics of *its own breed*, must of necessity be almost worthless. On the other hand, it will be observed that points of less value, perhaps, in themselves, but which are characteristic *deficiencies* in the breed, or at any rate difficult to sustain at their maximum excellence, are marked numerically high, as they go far to complete or perfect the natural excellence of the animal.

Again, for the above reasons, it will be found that the *same* points, in *different breeds*, have different numerical values attached to them.

### POINTS OF A SHORTHORN COW.

**PEDIGREE**—showing unbroken descent, on both sides, from known animals, derived from Eng-

lish herds, as found in the English or American Herd Books, and without this, an animal can not compete in this class.

- 3 THE HEAD, small, lean and bony, tapering to the muzzle.
- 2 THE FACE somewhat long, the fleshy portion of the nose of a light delicate color.
- 2 THE EYE is of great significance and should be prominent, bright and clear—"prominent," from an accumulation of "adepts" in the back part of its socket, which indicates a tendency to lay on fat—"bright," as an evidence of a good disposition—"clear," as a guarantee of the animal's health; whereas a dull, sluggish eye belongs to a slow feeder; and a wild, restless eye betrays an unquiet, fitful temper.
- 1 THE HORNS—light in substance and waxy in color, and symmetrically set on the head; the Ear large, thin, and with considerable action.
- 2 THE NECK—rather short than long, tapering to the head; clean in the throat, and full at its base, thus covering and filling out the points of the shoulders.
- 14 THE CHEST—broad from point to point of the shoulders; deep from the anterior dorsal vertebra to the floor of the sternum, and both round and full just back of the elbows; sometimes designated by the phrase, "thick through the heart." These are unquestionably the most important points in every animal, as constitution must depend on their perfect development, and the ample room thus afforded for the free action of the heart and lungs.
- 5 THE BRISKET, however deep or projecting, must not be confounded with *capacity* of chest; for though a very attractive and selling point, it, in reality, adds nothing to the space within, however it may increase the girth without.—It is in fact nothing more nor less than a muscular adipose substance, attached to the anterior portion of the sternum, or breast-bone, and thence extending itself back. This form, however, of the brisket indicates a disposition to lay on fat generally throughout the frame, and in this point of view is valuable.
- 4 THE SHOULDER, where weight, as in the Shorthorn, is the object, should be somewhat upright and of good width at the points, with the blade-bone just sufficiently curved to blend its upper portion smoothly with the crops.
- 8 THE CROPS must be full and level with the

shoulders and back; and is, perhaps, one of the most difficult points to breed right in the Shorthorn.

- 8 **THE BACK, LOIN and HIPS** should be broad and wide, forming a straight and even line from the neck to the setting on of the tail, the hips or hucks round and well covered.
- 5 **THE RUMPS** laid up high, with plenty of flesh on their extremities.
- 2 **THE ELVIS** should be large, indicated by the width of the hips (as already mentioned) and the breadth of the twist.
- 3 **THE TWIST**, should be so well filled out in its "seam" as to form nearly an even and wide plain, between the thighs.
- 5 **THE QUARTERS**—long, straight, and well developed downwards.
- 4 **THE CARCASS**—round; the ribs nearly circular, and extending well back.
- 3 **THE FLANKS**—deep, wide, and full in proportion to condition.
- 2 **THE LEG**—short, straight, and standing square with the body.
- 3 **THE PLATES** of the belly strong, and thus preserving nearly a straight under line.
- 2 **THE TAIL**—flat and broad at its root, but fine in its cord, and placed *high up*, and on a level with rumps.
- 2 **THE CARRIAGE** of an animal gives style and beauty; the walk should be square and the step quick; the head up.
- 15 **QUALITY**—On this the thriftiness, the feeding properties, and the value of the animal depends; and upon the touch of this quality rests, in a good measure, the grazier's and the butcher's judgment. If the "touch" be good, some deficiency of form may be excused; but if it be hard and stiff, nothing can compensate for so unpromising a feature. In raising the skin from the body, between the thumb and finger, it should have a soft, flexible and substantial feel, and when beneath the out-spread hand, it should move easily with it, and under it, as though resting on a soft, elastic, cellular substance; which, however, becomes firmer as the animal "ripens." A thin papery skin is objectionable, more especially in a cold climate.
- 2 **THE COAT** should be thick, short and mossy, with longer hair in winter, fine, soft and glossy in summer.
- 3 **THE UDDER**—pliable and thin in its texture, —reaching well forward, roomy behind, and the 100 teats standing wide apart, and of convenient size.

#### POINTS OF THE SHORTHORN BULL.

As regards the male animal, it is only necessary to remark, that the points desirable in the female are generally so in the male, but must, of course, be attended by that masculine character which is inseparable from a strong, vigorous constitution. Even a certain degree of coarseness is admissible, but then it must be so exclusively of a masculine description as never to be discovered in the females of his get. In contra-distinction to the cow, the head of the bull, may be shorter, the frontal-bone broader, and the occipital flat and stronger, that it may receive and sustain the horn—and this latter

may be excused if a little heavy at the base, so its spiral form, its quality and color be right. Neither is the looseness of the skin, attached to, and depending from the under jaw, to be deemed other than a feature of the sex, *provided* it is not extended beyond the bone, but leaves the gullet and throat clean and free from dewlap.

The upper portion of the neck should be full and *muscular*, for it is an indication of strength, power and constitution. The spine should be strong, the bones of the loin long and broad, and the whole muscular system wide and thoroughly developed over the entire frame.

#### NORTH DEVONS.

**PURITY** of blood, as traced back satisfactorily to importations of both dam and sire, from known English breeders, or as found in the lately-established Herd Book, for North Devons; and without this, an animal cannot compete in this class.

- 4 **THE HEAD** should be small, lean and bony, the forehead wide, flat, or, from a fullness of the frontal bone over the eyes, somewhat dishing; the face straight; the muzzle fine; the nostrils open; the lips thin, and rather flat.
- 4 **THE NOSE** of a light delicate orange color.
- 4 **THE EYE** should be bright, prominent, and clear, but mild and gentle in its expression, as indicative of that spirited, but tractable disposition, so necessary to cattle that must bear the yoke; a beautiful orange-colored ring should invariably surround the eye.
- 2 **THE EAR**—thin; of a rich orange color within, of medium size, with a quick and ready movement, expressive of attention.
- 2 **THE HORNS**—light, tapering, of a waxy color towards the extremity, and gaily as well as symmetrically placed upon the head; the occipital bone, narrow, thus bringing the base of the horns nearer together.
- 2 **THE NECK** of medium length, somewhat light in substance, very clean, and well set up on the shoulder.
- 14 **THE CHEST**—deep and round, carrying its fullness well back of the elbows, thus affording, by the aid of a springing rib, abundant internal room for the action of the thoracic viscera, the heart and lungs, and that too without an *extreme* width forward, and between the points of the shoulders, which might interfere with the action of the animal.
- 4 **THE BRISKET**—It being assumed that it adds nothing to the internal capacity of the chest, must not overload the breast, but be sufficiently developed to guarantee a feeding property, attended with a full proportion of fatty secretion.
- 4 **THE SHOULDER** is, in this breed, a very beautiful and important point, and should in a degree approximate in form to that of the horse. It should take a more sloping position than is found in most other breeds, with its points less projecting, and angular, and the blade bone more curved, thus blending with and forming a fine wither, rising a little above the level line of the back.
- 3 **THE CROPS** full and even, forming a true line



with the somewhat rising shoulder, and level back, without either drop or hollow.

- 9 **BACK**, loin and hips, broad and wide, running on a level with the setting on of the tail.
- 5 **THE RUMPS**—lying broad apart, high, and well covered.
- 2 **THE PELVIS**—wide.
- 3 **THE TWIST**—full and broad.
- 6 **THE QUARTERS** long and thoroughly filled up between the hocks, or hip bones, and the rumps; with a good muscular development down the thigh to the hocks.
- 3 **THE FLANK**, moderately deep, full and mellow, in proportion to condition.
- 5 **THE LEGS** not too short, and standing as square, and straight behind, as may be compatible with activity. The bone quite small below the hock and knee; the sinews large and clean, with the fore-arm well developed.
- 2 **THE CARCASS** round and straight; its posterior ribs almost circular, extending well back, and springing nearly horizontally from the vertebra, giving, in fact, much greater capacity than would at first appear.
- 1 **THE TAIL**, at its junction, level with the back, long, very slender in its cord, and finishing with a tassel of white hair.
- 1 **THE COLOR**, in its *shades and degrees*, is more or less governed by fashion; but in the Devon is always red. Formerly a rich blood-red was the favorite color, and a test of purity; and now a somewhat lighter color is in vogue, approaching rather nearer to that of the *South Devon*, which is a larger, coarser, stronger animal. In all cases, the color grows lighter round the muzzle, while a dark mahogany color, verging almost to a black, and growing yet darker about the head, always was a very questionable color for a *true North Devon*, more especially when accompanied by a dark nose.
- 1 **THE HAIR** should be short, thick, and fine; and if showing on its surface a fine curl, or ripple, it looks richer in color, and is supposed to indicate a hardier and more thrifty animal.
- 1 **THE UDDER** should be such as will afford the best promise of capacity and product.
- 3 **CARRIAGE**—The Devons having, from their excellence in the yoke, another destiny besides that of the butcher's block, it is all-important that the animal's carriage should indicate as much; but, to obtain this, something of the heavy, inert, squarely-moulded frame of the merely beefing animal must be relinquished for a lighter and more active frame.
- 15 **QUALITY**—On this the thriftiness, the feeding properties, and the value of the animal depend; and upon the touch of this quality rests, in a great measure, the grazier's and the butcher's judgment. If the "touch" be good, some deficiency of form may be excused; but if it be hard and stiff, nothing can compensate for so unpromising a feature. In raising the skin from the body, between the thumb and finger, it should have a soft, flexible and substantial feel; and when beneath the out-spread hand, it should move easily with it, and under it, as though resting on a soft, elastic, cellular substance; which, however, becomes firmer as the

animal "ripens." A thin, papery skin is — objectionable, more especially in a cold climate.

POINTS OF THE DEVON BULL,  
*Same as the Shorthorn Bull;—which see.*

#### HEREFORDS.

- PURITY OF BLOOD, as traced back to the satisfaction of committees, to imported blood, on both sides, from some known English breeder, or as found in Eyton's Hereford Herd Book.
- 3 **THE HEAD**—moderately small, with a good width of forehead, tapering to the muzzle; the cheek-bone rather deep, but clean in the jaw.
  - 2 **THE NOSE**, light in its color, and the whole head free from fleshiness.
  - 2 **THE EYE** full, mild, and cheerful in its expression.
  - 1 **THE EAR** of medium size.
  - 2 **THE HORNS**—light and tapering, long and spreading, with an outward and upward turn, giving a gay and lofty expression to the whole head.
  - 2 **THE NECK**—of a medium length; full in its junction with the shoulders, spreading well over the shoulder points, and tapering finely to the head.
  - 14 **THE CHEST**—broad, round, and deep; its floor running well back of the elbows, which, with a springing fore rib, gives great interior capacity to this all-important portion of the body.
  - 4 **THE BRISKET**—when in flesh, largely developed, descending low between the legs, and deep, by covering the anterior portion of the sternum, or breast-bone, but never interfering with the action of the animal when in working condition.
  - 3 **THE SHOULDER**—lying snugly and closely in towards the top, and spreading towards the points; the blade sloping somewhat back, and running pretty well up into the withers, which, by rising a very trifle above the level line of the back, gives to the ox a very upstanding, and beautiful fore-end. The whole shoulder well clothed with muscle.
  - 3 **THE CROPS**—filling all up evenly behind the shoulders, and blending them smoothly with the muscles of the back.
  - 8 **THE BACK**, loin, and hips, should be broad, wide, and level.
  - 4 **THE RUMPS** should lie nearly, or quite level with the back, and their covering should be abundant, mellow, loose, and freely moving under the hand, thus showing great aptitude to fatten.
  - 3 **THE PELVIS**—roomy, indicated by wide hips, as already mentioned, and the space between the rumps, which should stand well apart, giving a general breadth to the posterior portion of the animal.
  - 5 **THE TWIST**, broad and full, extending well down on each side of the thigh, with corresponding width—a broad twist as a good indication of a butcher's animal.
  - 6 **THE HIND QUARTERS**—large and thoroughly developed in their upper and more valuable portions, as beef. The thigh gradually tapering to the hock, but muscular.

- 8 **THE CARCASS**—round throughout, full and capacious, with the under line of the belly level, or nearly so.
- 3 **THE FLANK** full and wide.
- 3 **THE LEGS**—straight, upright, firmly placed to support the superincumbent weight; a strong back sinew, but by no means a large, coarse cannon bone.
- 3 **THE PLATES** of the belly strong, and thus preserving nearly a straight under line.
- 2 **THE TAIL**—large and full at its point of attachment, but fine in its chord.
- 3 **THE CARRIAGE**—prompt, resolute, and cheerful; and in the ox, gay and lively.
- 3 **THE HAIR**—thick, close and furry, and if accompanied with a long growth, and a disposition to curl moderately, is more in estimation, but that which has a harsh and wiry feel is objectionable.
- 2 **THE UDDER** should be such as will afford the best promise of capacity and product.
- 1 **COLOR**—Reds or rich browns, oftentimes very dark, with a white or "brockled" face, are now the colors, and marking of the Herefords, though grey Herefords, or cream-colored, are not uncommon.
- 15 **QUALITY**—On this the thriftiness, the feeding properties, and the value of the animal depends; and upon the touch of this quality rests, in a great measure, the grazier's and the butcher's judgment. If the "touch" be good, some deficiency of form may be excused; but if it be hard and stiff, nothing can compensate for so unpromising a feature. In raising the skin from the body, between the thumb and finger, it should have a soft, flexible and substantial feel, and when beneath the out-spread hand, it should move easily with it, and under it, as though resting on a soft, elastic, cellular substance; which, however, becomes firmer as the animal "ripens." A thin, papery skin is objectionable, more especially in a cold climate.

POINTS OF THE HEREFORD BULL,  
*Same as the Shorthorn Bull;—which see.*

#### AYRSHIRES.

- PURITY OF BLOOD, as traced back to importations of both dam and sire, under such evidence as will satisfy committees.
- 4 **THE HEAD**, as in other breeds, small; the face long and narrow; the muzzle and nose variable.
- 2 **THE EYE** placid and not strikingly large.
- 4 **THE EAR** of full size, and of an orange color within.
- 2 **THE HORNS** small, tapering, with an outward and upward turn, and set on wide apart; the face somewhat dishing.
- 4 **THE NECK** of medium length, clean in the throat, very light throughout, and tapering to the head.
- 6 **THE SHOULDERS** lying snugly to the body, thin at their top, small at their points, not long in the blade, nor loaded with muscle.
- 12 **THE CHEST** must retain sufficient width and roundness to insure constitution. The lightness of the fore-quarter, and the "wedge-

- shape" of the animal, from the hind-quarter forward, arising more from a small, flat and thin shoulder, than from any undue narrowness of the chest.
- 4 **THE CROPS** easily blend in with so thin a shoulder and prevent all hollowness behind.
- 4 **THE BRISKET** not over-loading the fore-end, but light.
- 8 **THE BACK** should be straight, and the loin wide, the hips rather high and well spread.
- 4 **THE PELVIS** roomy, causing a good breadth at what is termed the "thurl," or "round-bone," and between the points of the rumps.
- 6 **THE QUARTERS** long, tolerably muscular, and full in their upper portion, but moulding into the thighs below, which should have a degree of flatness, affording thus more space for a full udder. The flank well let down, but not heavy.
- 8 **THE RIBS**, behind, springing out *very* round and full, affording space for a large udder, which by Ayrshire breeders is considered very essential to secure the milking property; the whole carcass thus acquiring increased volume towards its posterior portion.
- 4 **THE RUMPS** nearly level with the back, projecting but little.
- 1 **THE TAIL** thin in its cord, of full length, light in its hair, and set somewhat farther into the back than would be admissible with some other breeds.
- 3 **THE LEGS** delicate and fine in the bone, inclining to be short, and well knit together at the joints.
- 12 **THE UDDER** in this breed is of more especial importance, as the Ayrshires have been bred almost exclusively with reference to their milking properties. The great feature of the udder should be capacity, without being fleshy. It should be carried squarely and broadly forward, and show itself largely behind. As it rises upward it should not mingle too immediately with the muscle of the thighs, but continue to preserve its own *peculiar* texture of skin—thin, delicate and ample in its folds.—The teats should stand wide apart, and be lengthy, but not large and coarse.
- 6 **THE HANDLING** will show the skin to be of medium thickness only, moving freely under the hand and evincing a readiness in the animal to take on flesh, when a drain on the constitution is no longer made by the milkpail.
- 4 **THE HAIR** soft and thick, in the phraseology of the country, woolly.
- 1 **COLOR, VARIES**—a dark red—a rich brown—a liver color, or mahogany, running into almost a black; those very much broken and spotty at the edges on a white ground are the favorite colors at the present time. The light yellow is, however, a color sometimes found on very good cows, but these pale colors are objected to from an impression that such belong to animals of less constitution.
- 1 **CARRIAGE** should be light, active, and even—gay; this latter appearance is much promoted by the inward turn of the horn.

POINTS OF THE AYRSHIRE BULL,  
*Same as the Shorthorn Bull;—which see.*



GREAT NATIONAL CATTLE SHOW AT  
KILLARNEY.

*Abridged from the Irish Farmers' Gazette.*

The Royal Agricultural Improvement Society of Ireland held their great annual show of cattle at Killarney, on Wednesday, August 10th, and three following days. The site was judiciously and conveniently chosen, being the rising ground belonging to the Railway Company, lying between the railway and Cork mail coach road, and immediately opposite the station offices. The cattle, pigs, poultry, butter, cheese, and flax, were exhibited in spacious sheds erected for the purpose; the sheep in pens in front, and the implements on the low excavated area, between the slopes and rails, flights of steps being erected to give free and easy access between the cattle and implement yards. A constant and full supply of water was conveyed from the company's works by force pumps and pipes, specially laid down for that purpose, which supplied spacious temporary tanks. On the whole, the arrangements were good, and well carried out in detail.

The entries for short horns were more numerous than they were for last year's show, held at Galway, and were very select—so much so, as to excite the admiration of the judges, who declared that finer or better stock could not be exhibited at any show; in fact, it could not be otherwise, as the best blood in England, Ireland, and Scotland, was well represented. Lord Talbot's splendid bull Phoenix, which was awarded the first prize of 30 sovereigns, and the gold medal, as the best of all the prize bulls; every day he gets older he gets better; in fact, his best points are becoming every day more fully developed. Mr. Douglass of Athelstaneford, took the second prize. In fact, by a careful examination of the prize list it may be perceived that the judges had a most difficult task to perform, several animals being commended, and highly commended—so nearly disapproach the perfection of the prize animals; and again, when one exhibitor is successful in one class, he gets beaten in another, as may be observed in Mr. Townley's case, who has again carried off the Purcell challenge cup and all the honours, with his beautiful cow, Butterfly, beating the best blood in the country, in section 4,

and is himself beaten in section 6, by Mr. Douglass, with his splendid heifer, Purity. We observe that Mr. Douglass took two second prizes, in sections 6 and 7, for two heifers out of Rose of Autumn, by two separate bulls, thus proving the superiority of the dam. We suspect Mr. D. has committed a serious mistake in selling the dam, and Mr. Latouche, of Harristown, committed another, by disposing of her in the first instance. We find that the Earl of Charlemont has been successful in Devons, and with his beautiful Kerry bull, Young Rory, has beaten all the Kerries in their own Kingdom.

There were some fine agricultural horses and mares exhibited, and amongst the unsuccessful we think Mr. Douglass's mare, 178, deserves much notice.

The sheep numbered less lots than last season, but were, on the whole, if anything, superior.

The entries in pigs were nearly one half more than those of last season, and generally of the most superior description, maintaining their excellence, and, as we before remarked, scarcely leaving a wish for further improvement.

The entries for poultry were rather less this season than last, but the distance must have detained many from exhibiting, as we missed the names of some of the best breeders, though those exhibited were excellent of the sort.

The entries for dairy produce nearly doubled those of last season, and, in most cases, the quality was excellent.

The implements exhibited were very select, and would have been more numerous, but for some disappointment in forwarding some collections entered, particularly those of Richmond and Chandler, which, though forwarded some time since, did not reach the grounds up to Thursday evening.

SHORT-HORNS.

For the best bull, calved on or after the 1st January, 1848, and previous to 1st January, 1851, 30 sovs.; to Lord Talbot de Malahide, for his famous bull Phoenix, No. 8. This fine animal is now in much better condition for service than he was last year, when he was in very high condition; but his muscle was not of that firm yet elastic texture which is now so sensible to the touch on handling. He was crowded about, and much admired during the show. He was also awarded the gold medal, as the best of all the prize bulls. Phoenix was the prize bull at the

Show of the Royal Agricultural Society of England, held at Lewes, of the Royal Highland Society, at Perth, of the Royal Agricultural Improvement Society of Ireland, at Galway, in 1852, and now, in 1853, at Killarney.

For the best heifer in calf or in milk, calved in 1851, 10 sovs.; to James Douglass, Athelstaneford, for Purity, No. 59, who also took the second prize, of 5 sovs., for Ladylike, No. 60, thus beating Mr. Towneley's beautiful heifer, Fredica, and others. Ladylike was bred by Mr. Latouche, of Harristown, county Kildare, out of Rose of Autumn, both of which were purchased by Mr. Douglass at the Harristown sale. Mr. Douglass obtained for those beautiful heifers the very handsome sum of one hundred guineas each, from the Hon. B. W. Egan, for the purpose of taking them to America to improve the breed of stock; for which object the Hon. Mr. Egan came to this country.

#### SHEEP—LEICESTERS.

In the short-horned stock, the judges gave universal satisfaction, but the awards in the sheep class were received with much grumbling and dissatisfaction in many cases. There is a circumstance connected with this and former shows of sheep, which really deserves reprehension. Sheep for competition should not be ornamented by trappings of any sort. It is common with some exhibitors to put rings with medals in their ears; others put on new leather head stalls, with brass, and other ornaments, which are easily distinguishable. We do not mean to say that those parties put those on with a view to signal to the judges whose they are; but this we know, that in cases of difficult decision, anything tending to convey a knowledge of the breeding of the animal, will have a correspondent tendency in making the award, as all other things being equal or nearly so, blood will give the preponderance, as that may be depended on in the long run, and, therefore, in case of hesitation, cause immediate decision; we would therefore respectfully put it to the committee of the society, whether they should not decide against those trappings. We know if they do the rule will give general satisfaction; and where there is so very close an affinity between animals of the most noted rival breeders, this is the more necessary. In section 1., besides the prize animals, there were numerous prize animals from the flocks of the best breeders in England, Scotland, and Ireland.

#### SWINE.

On the whole, the show of pigs was, in point of quality, nothing inferior to any of our former shows, and, in numbers, far exceeded the show of last year, so that the honors were most keenly contested by the rival breeders of the Berkshire variety, and the task imposed on the judges in coming to a decision, a very difficult and onerous one.

#### IMPLEMENTS.

Some of the implements exhibited underwent a preparatory trial at Malahide, which, for the first two days we were able to be present, was not very satisfactory, with the exception of Bentall's broadshare, which, in the three varieties

tried, did its work well. The trial of ploughs was very limited, amongst which Graham, of Smithfield, came off victoriously; and in the trial of drill-grubbers, Hill & Co.'s expanding horse-hoe did its duty admirably, as a hoe and scuffler; but, for deeply pulverising the soil, the work performed by the two belonging to Gray, of Belfast, was unexceptionable; that of Sheridan's, similar to but lighter than Gray's, though badly worked, and, meeting with an accident, was next, as to depth. Law's, of Shettleson, did its work well, but not so deep as Gray's and Sheridan's, the latter being powerful implements, and very steady, particularly Gray's. As to the three and four horse-grubbers, the trial was not of a sort to come to any just decision, though the implements were by the first makers of the day; each choked in a short time, from the extreme foulness of the land, which had been up to a short time previously occupied by small farmers. The trial of two-horse grubbers, on Monday evening, which was simultaneous, in some degree, with that of Samuelson's digging or forking machine, was, to us, equally unsatisfactory, and looked upon it, from the number at work together, and the tortuous track each took, as merely for the purpose of putting them in working trim, but we learned after that the judges had come to a determination as to the merits of each.

A further trial of ploughs was had at Killarney, in a field from which the hay had been taken, amongst which Graham's swing plough again established its very great superiority. Gray, of Belfast, after going to some expense in bringing forward his plough, was refused a trial, on the grounds, we understand, of having been thrown out at Malahide, but, as that was undoubtedly the fault of the horses, and not of the plough, we cannot look upon this decision as particularly just. Two two-wheel ploughs entered in competition; that of Balls, Rothwell, Northamptonshire, was awarded a first-class medal, and Ransom's Y. R. C. two-wheel plough highly commended. The ploughs were tested by Stanley's dynamometer (Mr. S., by the request of the judges, being in attendance,) with the most satisfactory results.

The general show of implements was both select as to general utility, and most creditable, in point of material and workmanship, to the manufacturers.

This great national exhibition was concluded by a splendid dinner, at which his Grace the Duke of Leinster, President of the Society, occupied the chair. The evening was most agreeably spent, the speeches good and to the purpose, and we regret that our space will only admit of a bare allusion to these interesting proceedings. Ireland is evidently improving in her agricultural and other great national interests. May the movement continue uninterrupted!

The love of the beautiful and the true, like the dew drop in the heart of the crystal, remains forever clear and limpid in the inmost shrine of the heart.



# MECHI'S LATEST IMPROVEMENTS.

In a report of the Annual Exhibition of *The Royal Northern Agricultural Society*, recently held in Aberdeen, at which Mr. Mechi was an invited guest, appear the following statements made by that gentleman at a public meeting of the members.

We are far from looking upon all that Mr. Mechi says and does as infallible, and much that he recommends is, even in England, impracticable, in the present state of things. We think, however, that his expensive experiments in their practical results must be the production of good, inasmuch as they demonstrate more clearly the truth, or enable people to detect error with greater facility.

After the chairman, Sir James D. Elphinstone, had called upon Mr. Mechi to favor the meeting with a statement of his method of farming:

Mr. Mechi rose amid continued applause and said—I think the best way of elucidating the facts I have to bring forward is to do so in familiar style, as if we were in conversation. I shall tell you what I am doing on my part, and shall be happy to answer any questions put to me on the subject. I need not tell you that my great endeavour has been to make farming more profitable than we now find it. We know that it is naturally a slow business, and rather uncertain; because we are dependent, to a great extent, upon the seasons; and, if we can, by any new mode or invention, remove, to a certain degree, this dependence, we are conferring a great benefit on agriculture. I need not remind you that we had a strong illustration of this this year. In the north country you must have generally felt it. We know that a great part of your fame arises from your having a moist climate, and your care in availing yourselves of it by good culture. Your turnip culture is very perfect. But this season you have an Essex climate, and the result is, an Essex crop of turnips. I am not sorry for it in one respect, because it enables you to see the defects of your system; in other respects, I am very sorry. But when I tell you it is common in Essex, to see a burning sun baking our clays like cast-iron, without a drop of rain for nine or ten weeks, it is impossible, in those strong clays, to grow a large crop of turnips; but now that I have put the new system of irrigation in practice, I take care that the land shall never become baked. That sun, which was before so objectionable, becomes, with moisture, the best friend I have got. There is no doubt that if you had had the power of irrigation this year, you would have been in a much better state than you now are. This would be attended with expense; but everything in agriculture must be so. I do not think it is so much a question of expense we should attend to, as—whether it is remunerative

after it is done; and, I do honestly assure you it is remunerative. Now, supposing I tell you what it costs. I would first ask what is the price per ton of iron piping in this country? I paid £4 5s. per ton at Newcastle, last year, for three-inch iron pipes.

Convener Watson replied that the Commissioners of Police, as a public body, got their piping at £6 15. per ton. This year it had been £6 10.

Well, gentlemen, resumed Mr. Mechi, 3 yards of 3-inch piping weigh 118 pounds; and, for round numbers, we will call it a hundred-weight. Now, it requires 15 yards per acre—that is 6 hundred-weight of iron-piping; and 600 yards at 6s. 6d. per hundred-weight would be 39s. That is the extreme quantity required per English acre. Then comes the question of pouring some lead into the joints, which would make a probable addition of 6d. per yard, and then the work is done so far.

The other day, I had a letter from Mr. Myles of Bristol, a good practical farmer and a farmer's friend. He has adopted this principle of irrigation since he saw mine: and he wrote me a letter to say that he had done the whole of his by gravitation at the rate of two pounds per acre, which is very cheap indeed. The first year it doubled his grass crop. He said he never saw such a crop before, and if that is true, as I quite believe it is, it is a striking illustration of the benefits of the system. But, to resume my statements, I will say your piping has cost you about 45s. per acre; the rest you can calculate. At one end you have a hydrant. I have got one of these for every eleven acres; so that all you see on the farm is fifteen little iron posts, on 170 acres; and to these I attach, as you do to the fire-engine in your town, a gutta percha tube of 200 yards in length. At the other end you must have a forcing pump of some kind; it may be gravitation, or it may be steam. That of course is a point very easily ascertained. I have two miles of underground iron piping, and I can put on the liquified manure, and plough it in three feet deep and bring the cart home again, for three farthings a ton, a sum so ridiculously small, compared with the usual expense, that I think I may strongly recommend the plan to your notice. You have heaps to make and turn, you have your carts to drive and bring back, you have roads to mend, and there is much expense in preparing manure for turnip crops: but in my case, supposing my bullocks deposit a hundred loads of pudding upon the boards, I fire at it in the morning with this fire-engine, then it goes in a stream to the great tank, from this it is forced in a fluid form anywhere within two miles, sinks into the ground to the very roots of the crop and is in action twenty-four hours after it is dropped. You lose what you do not see, but feel most seriously. You lose your ammonia, for it is one of the most volatile things in the world, and I wish you to understand what your most eminent men will tell you—that there is nothing will dissolve your soil like ammonia. You use lime, but I assure you that the recent experiments of Professor Wey, and other men of eminence, have shown that lime is secondary in its effects on the soil to ammonia. If you want to improve a bad clay, I assure you that if you take your manure

as it drops from the animal, with plenty of water, and let it at once into the soil, your subsoil will be fertilized. The worst clay on your farm, which has grown nothing for years, when manured in the ordinary way, after a shower of this liquor, will grow even rye-grass in three months. It is a chemical question—your soil is acted on by the ammonia, and is softened and made ready for ploughing. I have a field of five acres which used to starve a couple of cows. I sowed that field seven years ago with oats, and put in the finest grass seeds from Mr. Gibb's of Piccadilly. They were all choked up by the indigenous weeds, and I no more saw them. Last year in May, I began to work it with the liquid manure and continued through the winter, and now it is covered with the finest grasses—I now keep ten head of cattle and three horses on it, and they never eat it down. In root crops the same result take place; the crop is doubled. My beans are perfectly level by the application of this fluid. In the case of wheat, you must take care not to put it on after turnips, because your wheat would be too strong. When you adopt that principle I think it will not be necessary to have two years' crops; I think you will be able to grow it all clover, instead of mixing with ryegrass. The same result will take place in your fields as in your greenhouses and hothouses. Does the gardener when he has heat give his plants water daily? Otherwise they would be ruined, and, therefore, I am particular in bringing these matters before you. Suppose I wanted to put guano on my field, I would put it into the tank agitated by an air-pump, and in a quarter of an hour you would see it pass out in a stream, going down into the subsoil to the roots of the plants. The great advantage is that you absolutely fertilize the bottom-soil, while with the plough you cannot get down above two feet and a half. I used to lose many crops by wire-worm, which is common in Essex, but no insect can stand the ammoniacal shower. The moment you see a fly on your turnips apply your jet, and the insect must escape or die. We put on a hundred gallons a minute all day long, and all night long; we do not stop even at dinner-time. Fortunately for me, I obtained a little bog, and there I got plenty of water that now is a great source of fertility; in fact, I would not give it for £3000, because I can make better use of it than I could of the money. You have a farmer at Mirehill, and another in Ayrshire, in your own country, who have made these experiments in a profitable manner. That they have received censure it is not to be wondered at, because there was never anything new but was censured. It is natural that we should be attached to old customs, and it is proper, because, otherwise, we might follow men who ought not to be followed; but I do not think it is your duty to test it by the common rules of calculation—pounds, shillings, and pence—and to go into the question without prejudice. I have reason to know that every man who has carried out this principle has reason to congratulate himself on his success. If you follow in our steps you will not have the difficulties we had to encounter in a new undertaking, and if any or all of you like to come, or send to me, you

shall have full access to my farm—(loud applause). I believe I was the first who attempted to send out all the manure. Last year I had twenty dead horses and some dead cows, besides the puddings, in my tank; I had thirty feet of solid stuff, and, though I had air pipes at the bottom, I could not lift the mass. Luckily it dropt into my head to apply the air pump—I pumped down the air, and the solid matter was set in motion till brought within the line of suction, and that took it away. All these dead horses, except the large bones, have gone through a hole the size of my finger; and I could undertake to put you all into the tank, and in four weeks every bit of you would go through the hole—[laughter]. When a mass like that is brought into contact with water you can have no idea of the chemical affinity that takes place. The gas of fermentation is taken care of by the water; it does not go to air, but is laid up in store in the water to go of in the fertilizing stream. Tenants who have large farms and long leases, might make such arrangement with the landlords as would give ample opportunities for putting the system in practice, and preserve uninjured the interests of both. Water itself is manure for grasses, as is well known by those who have meadows, and if it were mixed with the excrements of your animals the results would astonish you. I shall now be happy to answer any questions before proceeding to my other subject.

Sir J. D. Elphinstone—I should like to know for the information of the meeting, what has been the whole cost of the steam-engine and piping on your farm of one hundred and seventy acres.

Mr. Mechi—As near as I can put my expenses down, and I was pretty particular, I would say that the piping, at the former price of iron, cost £4 5s. per acre; the tank cost £80; the engine of six-horse power [four would be sufficient] £150; the piping cost £150 per mile, that is £300 for the whole farm. I would recommend having a hydrent for every six miles, as gutta percha tubing is six times the price of iron; the gutta percha cost £50. Then there is the digging, &c. say £100 for that. That comes to £680 for the whole farm. You, gentlemen, use a good deal of straw for manure, and for littering to your animals. I have all mine on grating, and I find it answers well. Perhaps you would not like that, but I would recommend it, especially for sheep. It does well for pigs in hot weather. Bullocks do very well, and I think they would do better if the fore part where their knees go down were covered with matting. Mr Mechi then detailed his mode of cleaning his cow-houses, and described more minutely the method of distribution of the manure. He then, in answer to Sir J. D. Elphinstone, said they required two little boys and a man, whose wages would come to 26s. a week, to keep the two engines going, and put on eighty gallons a minute. One of the most important things, Mr. Mechi continued, is, that the deposits must be kept in constant agitation by a pressure of air sufficient to force any one of the company through a three inch hole as long as an eel—[loud laughter]. The great secret of profitable farming was this, to be able to grow a very large increase on a small space of ground. The



great friend of the farmer is manuring, and if they double their manure, they will then have some hopes of doubling their crops. He would advise them to collect their straw, and direct a jet upon it, which would extract all the soluble manure, leaving clean straw, which would soon rot by the same operation. In reply to a question from Sir James, as to whether it would be advisable to continue irrigation during frosty weather, he said that, during last winter, they irrigated every day till their pipes were frozen, unless their land was so hard as to allow it to run off, and, in every case, the result had been most satisfactory. In fact, the manure had a tendency to prevent the ground from being frozen.

### THE QUACKERY OF AGRICULTURAL SCIENCE.

In offering a few remarks on the subject named above, I beg to disclaim all personal reflection.—I shall aim only to expose things, not persons.—And first, permit me to explain what I mean by the term *science*. The general term means truth, with all its attributes and adjuncts arranged symmetrically. In its restricted or special sense, the term means full knowledge of an art or business in all its parts reduced to rule. For example, the science of agriculture, is a complete theoretical and practical knowledge of all the arts and means, practical and theoretical, required in conducting a farm in the best manner. The science of agriculture or scientific agriculture, does not mean a few skimmings of scum from the well of knowledge, a few imperfect analyses of a few handfuls of soil from a few fields; nor are the requirements of science fulfilled by an occasional dip in the spring of knowledge. The most scientific farmer I ever saw, could not analyze a handful of soil, according to what we call science. He had acquired by long experience and observation a knowledge of soils, their defects, and the remedies, that enabled him to judge with precision the quality of any soil, without the aid of the alembic or crucible. Now, if he had been enabled to resort to the art of Chemistry, it would have saved him much time and labour in acquiring his knowledge; but still he was a man of true science. It does not follow, because the blacksmith cannot explain the *science* of his use of air in his forge, or why he blows air among his coals, or why the doing so increases the heat of his forge, that he is not a scientific blacksmith—he may be and very often is a perfect master of his branch of science, so far as the practice of his own business is concerned. And he can teach others the art and practice, though he cannot teach the mere theory. Again, a man may acquire a perfect knowledge of agriculture from other teachers, than professors of Chemistry and Geology. To an observing eye, a soil will itself give indications of its qualities. I knew a man—I know him now, who, if he were about purchasing a piece of land, would look at the growth of the trees, bushes, and even weeds that were on the land, and could by them tell what the land was. I am aware that I shall be considered as an empiric rather than as a scientific teacher, if I go on in this strain; and therefore I shall proceed to my object, after one more remark, which, if

some folks consider it a *parthian* shot, I hope I will hurt nobody. I would give more for one ounce of good sound science, derived from practical experience, than for ten pounds of that derived from ordinary modern “scientific analyses and essays.”

I have long since come to the conclusion, that, as respects the science of medicine, there is more quackery in the profession than out of it, abundant as is the supply of the latter; so also in agricultural science, there is ten times as much quackery in the science as taught, as there is in the ordinary practice of agriculture. Pray, sir, what is a science? I have endeavoured to define the term above; but let me try again. True science is a *knowledge of a man's own business*, is it not? If a man knows how to make the most profit with the least amount of labour and capital, I imagine, whether you call him scientific or not, he possesses the best sort of knowledge of his business; and if this be not at present called science, it ought to. But here, just here, this successful farmer is called from his plow to listen to the harangue of some one who talks to him about the absence of the calcareous, or some other principle in his soil, and the necessity for his applying lime, potash, and ammonia, &c., &c. Well, the farmer will say, this is all very well, but I raise good crops, notwithstanding the absence of lime, &c., and what more will your addition enable me to do!—But says the lecturer, let me analyse your soil, and that will enable you to raise larger crops.—He goes to work, analyses the soil, and furnishes the farmer with a prescription as follows:

Phosphate of Lime, 100 lbs.  
Sulphate of Ammonia, 10 lbs.  
Carbonate of Lime, 500 lbs. &c. &c.

Mix thoroughly, and spread broadcast over one acre. Now this is all very well, but where is the farmer to get the various ingredients? The result is, the lecturer pockets his fee, and the farmer the loss; for it is impossible, even though the articles were ever so necessary to the soil, that they could be obtained by all, or even by anybody scarcely, considering the number of farmers. A few farmers may, by extra exertions, obtain some of them; some few may obtain one or two of them, but comparatively few persons in the great multitude of farmers, can obtain any of them. I need not enlarge upon this subject.—This quackery is at this day every where prevalent, in forms as various as the physiognomies of the propagators.

Now let all farmers take heed to themselves in this, and learn that the science of agriculture is that true knowledge of one's own farm and its soil, that enables him to make the most of it, without impoverishing, but rather continually improving it, at the least expense, in labour and money. If lime be accessible to you, try a small quantity on a small piece of land of a fair average of your farm; if it improves your crop to the amount of the expense of its application or more, then you have a scientific warrant for extending the application; if it does not, then you will have lost but little, either in money or labour. So with all other experiments; try them on a very small scale, and enlarge them upon success. Devoted as I am, and always have been to *science*, I would

not give one practical experiment for all the "scientific" theories of Liebig and other chemists put together, for practical farmers' use. The true science of agriculture is to be drawn alone from intelligent practical experience; and in the absence of such, the most perfect theories will be of no avail, in agriculture or any other business. I would by no means be understood as opposing the progress of agricultural chemistry—quite the contrary. A knowledge of it is a great and powerful assistant to the farmer. It will enable him very often to hit upon an improvement in his soil, that years of practice might not accomplish. But it is not the main or principal agent that he is to look to. A knowledge of the principle of action of all things in which we are engaged, is essential to a perfect understanding of the means to arrive at an end; and we should therefore study the science of an art, let that art be what it may. But this study of the science is one thing, and submission to the humbuggery of brazen-faced pretension another. Let every farmer study well and thoroughly the theory as he pursues the practice of agriculture, and thus improve and correct the latter by the suggestions of the former, as he progresses, and then he will soon become a scientific farmer.

On the contrary, we must all take care that we do not carry our opposition to *spurious* science into the territory of *true* science. Because practice does not always or often result in the support of theory, we must not therefore take it for granted that all theory, or even the particular theory involved, is unsound. We must continually bear in mind that all the operations of nature, the growth of plants, the formation of nutrition, everything, are governed by fixed laws; and that the theory is the mere arrangement of these laws, into a system of practical purposes. According to these laws, all the operations of the farm must be carried on to obtain the best results, and all our necessary failures will be, and must be, in proportion to our conformity to or deviation from those laws.

If, for example, any practice fails to produce the result indicated by the theory, one or two things will be self-evident; either the theory is predicted upon false principles, or the operator has failed to carry the theory into full effect.—This failure should not be considered as evidence that there is no such thing as sound theory. I believe that nine-tenths of the so-called scientific theories of the day, are the veriest scientific nonsense; and yet who shall say which is the *tenth*, or truthful one?

And now to the main object of our paper—the remedy for quackery, in all its forms and phases, where it is to be found and how obtained? The answer is plain—in the liberal education of our people. I cannot conclude this paper in a more appropriate way, than by addressing a few words to all our agricultural friends on this subject.—Few men have mixed more in the society of farmers than I have, and I am compelled to say that there is no one expenditure made by them so grudgingly, as that for the schooling of their sons. Among ordinary farmers, they "cannot spare them to go to school, except one quarter in the dead of winter;" and even then the *cheapest*

school, if there be a choice, is sought for. Now to obviate the evils of false, and to secure the advantages of true science, a liberal education is essential;\* the education of all the youth in the State—nothing more, nothing less. Until this is accomplished our agricultural community will continue to be the prey of quackery in all its forms.

—Country Gentleman.

G. B. SMITH.

\* NOTE.—Some time in the summer of 1851, (Sept. 15) we (the Associate Editor) had occasion to write a "short essay" on this subject, at the request of a correspondent. We have never lost sight of this great necessity of our race, and when we are more at leisure, and our columns less crowded, will indite a more lengthy discourse, from the text which Dr. SMITH has furnished above, though we are not quite sure that we shall arrive at just the conclusions that our venerated friend himself would, on this subject.—Ed.

#### AGRICULTURAL.

We have been favoured by a gentleman from the County of Norfolk, with a sample of what is rarely seen among the Agricultural products of this country, and of this County in particular, namely, *Millet*. The sample in question, the produce of *one grain* of seed is of luxuriant growth, and measures in height about six feet. It was taken from a field of Millet on the farm of L. H. Hunt, Esq., Warden of the County of Norfolk, and is, we are assured nothing more than a fair specimen of the whole crop. Millet is an excellent article for fodder, both for horses and neat cattle; and the seed, which is very abundant, is the very best winter food for poultry that can be given. In such seasons as this, Millet would be particularly valuable, for while the drought makes a light hay harvest, Millet seems to flourish best under a scorching sun. Those desirous of testing the advantages of Millet will have only to make a personal application to the gentleman above named, and, we are authorised in saying, he will be most happy to gratify them. When Millet is sown for *fodder* it should be done about the 8th of May; and one peck of seed is sufficient for an acre of ground—the crop being taken off like hay, while a little green. When wanted for seed, half a peck is all that is required, and of course it should be allowed to ripen.

We have also received a sample of Wheat from the farm of J. B. Carpenter, Esq., of Townsend, a portion of the same crop which is now the admiration of the Canadian department of the New York Exhibition. By a letter to Mr. C., from the person in charge of the Department, it appears that repeated applications have been made for this wheat by Americans; and that small quantities, of not more even than an ounce, have been eagerly sought, for the purpose of propagating this description of grain. The wheat is a fine specimen of the white flint kind—beautifully bright, plump and even—and does Mr. Carpenter, and the County of Norfolk, much credit.—*British American*.

THE best investment for a farmer is live stock and plow-shares.



TOWNSHIP OF HAMILTON FARMERS' CLUB

FALL AND SPRING PLOUGHING.

At the meeting of the Township of Hamilton Farmers' Club, held at Dickson's Inn, Court House, on Saturday, September 17th, 1853. P. R. Wright, Esq., President of the Club, in the Chair.

Present,—Messrs. Forsyth, Masson, Bourn, MacIntosh, Bennett, Ball, Alcorn, A. J. Burnham, Richardson, Wade, Sutherland, Burnet, &c., &c.

The subject for discussion was, whether it is most profitable for general cropping to plough in the fall or the spring. Mr. Sutherland introduced the subject by reading the following:—

ESSAY.

Man in the present race for riches is fast forgetting the old land marks of prosperity, and "speed the plough" is now abandoned for speed the ship, up steam or hoist sail, and away to the gold diggings. Speculate in Railroad stock, shave notes or lecture on Phrenology, anything but drag out existence at the plough tail. How often do we hear the remark—why the majority of farmers know but little more than the horses they drive. It is true the occupation of the farmer requiring in most cases his undivided attention, prevents him from making graceful manners or showing exterior accomplishments his particular study, yet he will be found quite as much imbued with that noble sentiment "do to others as you would be done by" and as much energy in his calling as those embarked in other pursuits.

The discoveries of the present century have perhaps done more for the general prosperity of the world than all that have preceded it, and although the farmer has participated largely in the benefits arising from these discoveries, they have been of still greater advantage to the commercial man.

The steam engine whether used by sea or land, has done so much to "annihilate time and space" and has given such an impetus to business, and created such a demand for manual labour to prepare the way for this mighty auxiliary, that the farmer will have to double his diligence to keep pace with the times. The man whose services you once readily secured for 2s. 6d. per day now doubles the dose, or if you demur tells you he's off to the railroad or the diggings. One of two things is self evident, that if the farmer has to pay 50 per cent. more for the manual labour of his farm, he has got to tax his energy to find appliances to reduce the cost of this item or play a losing game.

These preliminary remarks may no doubt seem irrelevant to the subject to be discussed, but my object for introducing the matter in this way, was for the purpose of advocating the introduction of labour saving machines on a more extensive scale, knowing how tardy we often are in procuring implements we even feel satisfied will be of incalculable benefit to us.

The question under discussion, whether it is most profitable to general cropping to plough in the fall or spring, will I am aware have advocates

for both courses, but although I lately heard an intelligent farmer express his surprise that people ploughed so much of their land in the fall and thereby exposing it to what he considered the injurious effects of the winter's frost. I have no doubt the majority of farmers will advocate its adoption from the impression that the action of the winter's frost has quite a different effect from what the above party supposes. The advocacy of fall ploughing will of course admit of various qualifications as regards its adoption—and in some cases it may not even be advantageous, but I feel convinced, that when done at the proper time—and on this point I hope something will be said—it will not only be found most expedient but most beneficial. One of the objections to sowing on fall ploughing is that the land is frequently baked so that a good seed bed cannot be got, to counteract this I would recommend the free use of the cultivator either before or after sowing, I have tried both ways and found them answer the purpose equally well. The cultivator I have successfully used was manufactured by Bruce of Dumfries and is a credit to Canadian enterprise, it has the advantage of cleansing itself better than anything of the kind introduced from the States, and is more light and easily handled both by man and horse, one span of horses will thoroughly pulverise twelve acres a day to the depth of three or six inches.

I think by rounding the ridges well up in the fall with one ploughing—and cultivate as stated in the spring it would be better than twice ploughing which is often adopted—and by this means you would have fresh soil to act on your crop, whereas when you plough twice you are exposing the very surface employed the previous season. If by the use of the cultivator one ploughing can be dispensed with another advantage would be that the land could be left undisturbed until a later period in the fall allowing the cattle some advantage in the run of the field. In a section of country where fall wheat is extensively grown these remarks would not be applicable, but in this section of the country where the greater proportion of the cereals are sown in spring the matter is more momentous. There can be no doubt fall will always have a preponderating claim over spring ploughing independent of its merits—because the rapidity necessary to get our crops in in this country in the spring, will always make the farmer desirous to get as much done beforehand as possible.

Confident that I can do little more than introduce the subject, I now leave it in the hands of those more capable to grapple with it.

Mr. Masson said, he was sorry the Chairman had called on him first, as he would rather have heard some of the others speak before himself. All that he would like to say was about ploughing, had it not been for fall ploughing he could not have got along at all—even if he had had men and horses for nothing, it would not have answered him at all to plough in the spring. He had often thought of sowing green crop on fall ploughing, just cultivating it well in the spring—as it was long before the land was sufficiently dry in the spring that it was difficult to reduce it fine enough. He would even prefer fall ploughing for Barley

but he would cultivate the land in the spring—just sow on the Barley and cultivate it in, the land he found was a dry soil. It was often said that fall ploughing did not do on light land, but he had found as far as his experience went that it answered as well on light as on heavy land. Twelve years ago he lived on a farm in Haldimand, and people told him he was spoiling his land by ploughing in the fall, but when harvest time came he reaped three times as much from his fall ploughed land as his neighbours did from their spring ploughing.

MR. BOURN said, that in regard to heavy land he would give in his adhesion to what Mr. Masson had said, but with regard to light land he had his doubts of the benefit of fall ploughing, he had tried it on his land and he found it very difficult to get grass seeds to take on land that was ploughed in the fall. For Peas he would not plough in the fall. His spring wheat had done best on his spring ploughed land, and his grass seeds took far better. He had never used a cultivator but he thought to cultivate with one was very similar to spring ploughing, on heavy land he thought fall ploughing best.

MR. MACINTOSH said, he was not aware that he could throw much light on the subject, he was of opinion that what was good for the goose was good for the gander, he therefore thought that fall ploughing was best for both kinds of land, he found that on his light land fall ploughing answered far best, it both enabled him to get in his crops earlier in the spring and he thought that it checked the growth of thistles and other weeds better than spring ploughing. Contrary to Mr. Bourn's experience, he found his grass seeds did best on fall ploughed land. To prevent his high land from running down with the heavy rains he run two or three furrows across the hill.

MR. BENNETT said, he was not much of a farmer, he used to live by his wits, but getting afraid he should starve for want of stock, he had turned his attention to farming, he had paid some attention to the subject and he thought fall ploughing much the best, he found that when he planted Indian Corn on spring ploughed land, it was mostly cut off with grubs, but when he planted on fall ploughing it escaped, he sowed his spring wheat on fall ploughing, and it was as good as any he saw, fall ploughing enabled the farmer to get in his crop earlier in the spring.

MR. BALL said, he must say that he had but little experience in farming, and on heavy land no experience at all. With regard to fall and spring ploughing, he was of opinion that if land was perfectly clean it made very little difference when it was ploughed; but if it was dirty, it did best to plough it with a good deep furrow in the fall, and then plough it very light in the spring. When land was very light and ploughed in the fall, it was apt to bake so solid, with the heavy rains, that it was hardly possible to cover the seed without a ploughing in the spring. He had never used a cultivator, as there was too many *nigger heads* in their land on the plains for a cultivator to work.

MR. A. ALCORN said, he had had a good deal of experience both with fall and spring ploughing. For spring wheat, he preferred ploughing

his land twice in the fall; but for other grains, he ploughed all the land he could in the fall, and as much of it over again in the spring. He was of opinion that (other things being equal) the oftener the land was ploughed it gave the better crops. He found that his crops was best on land that was ploughed in the fall and then over again in the spring. He was of opinion that spring ploughing was far better for keeping down thistles and other weeds than fall ploughing.

MR. A. J. BURNHAM said, he concurred in what Mr. Alcorn had said. He would prefer to plough his land in the fall and then over again in the spring, except, perhaps, for spring wheat, that, he thought, did fully best on fall ploughing.

MR. JOHN WADE said, he thought the essay we had just heard was very creditable to Mr. Sutherland, as he thought it very well got up.—He had had a good deal of experience for a number of years with both fall and spring ploughing; but there was so much difference in farms, some wet, some dry, some being high, and some low—so that what would apply to one farm might not apply to another in the immediate neighborhood. For spring wheat, his practice had been to prepare the land in the fall, and if he found it much baked in the spring, he went over it with a cultivator; if not baked he sowed on the fall ploughing. He thought that we were on the eve of an entire revolution in our ploughing, since the attention of mechanics had been turned to the improvement and invention of farm implements; that, he thought, would in many cases supercede our old ones. Last spring he had got what we called a "Michigan Sod and Sub-soil Plough," which beat anything of the plough kind he had ever seen,—this plough had two moulds, the one going before the other, the first mould paring off about two inches, and the second mould turning up the soil seven inches deep completely over the sod, and thoroughly pulverizing the soil, just as if it had been done by a spade. He ploughed down ten acres of land last spring, with this plough, for peas; the plough cut a furrow about twenty inches wide, and nine inches deep, and there was not a weed come up except that pest, the Canada thistle. He had just finished ploughing the land for peas before the severe rain storm that we had in the spring, so that it was nearly a week before he could get the peas sown; he sowed them with the drill, and had a very fair crop; now he was preparing that same piece of land for fall wheat; he tried the Scotch plough on it, and it just turned it up in great lumps; he then tried his new plough on it, and the work it did really surprised himself, it so thoroughly pulverized the soil and made it so fine. He thought that this plough would do better work and more of it than any plough ever made in Scotland; he used three horses on this plough. He thought a good cultivator was of very great importance on a farm; he had got a new cultivator this season that was going to beat anything yet; it runs three, four, or five inches deep, and cuts up everything in the shape of weeds. He thought that with a cultivator, such as he had got, and a Michigan sod and sub-soil plough, we might dispense with summer fallow nearly altogether. Though he considered that land was best prepared in the fall for spring



wheat, yet he must say that for the two last seasons part of his ground was ploughed in the fall and part in the spring, and he could tell no difference in the crop. He thought that since the Weevil came among us that late-sown spring wheat escaped its ravages better than what was sown early; consequently, if late sown, another ploughing would be necessary.

Mr. FORSYTH said, he liked to plough all he could in the fall; when preparing for spring wheat he ploughed as soon as he could after harvest, and ploughed again late in the fall. He had tried barley both on fall and spring ploughing, and he thought that sown on the spring ploughing was rather the best, but not much. For oats and peas, he would plough in the spring.

The PRESIDENT said, he would not detain the meeting by a lengthened summary. Although there was diversity of opinion upon minor points affecting the question, it appeared the principle of fall ploughing was fully upheld, especially on stiff soils. The reasons influencing this opinion appeared to be—the meliorating effect of frost—the necessity of early sowing—the shortness of our seed time—the fitness of the team for fall work, &c., any of which might be a sufficient inducement to keep the plough from rusting in the fall. A necessary adjunct to fall ploughing is the use of the cultivator or “scarifier” in spring, preferable to ploughing, for two very important reasons—it leaves the finely pulverized surface in the best possible state for a seed bed, and is capable of doing five times as much work. The implements described by Mr. Sutherland and Mr. Wade are, no doubt, of the very best construction. He had used the “triangle” steel teeth, and found every purpose answered. One thing is certain, without a cultivator, the benefits of fall ploughing can never be fully realized; and those gentlemen who have not used this *indispensable* implement must make up their mind to get one. The plough so highly recommended by Mr. Wade, constructed as it appears upon the principle of the “*Chinese troins*,” might be capable of doing its work in a business-like manner, but he must dissent in toto from the principle sought to be established by its use—to bury two inches of the surface, containing probably ten times the quantity of vegetable matter, under seven inches of sub-soil, appears so contrary to common sense, that he could not be induced to give this specimen of Yankee ingenuity even a trial, without a guarantee for deficiency of crop. Mr. Newton might rest satisfied that a good iron Scotch plough would be wanted a few years longer. He must congratulate the meeting upon having this important subject so ably introduced by Mr. Sutherland, and trusted the discussion would produce good results.

The thanks of the club were given to Mr. Sutherland for his essay.

The next meeting of the club was appointed to be held at Dickson's Inn, Court House, on the last Saturday in October, at 2 o'clock.

The subject for discussion to be the construction of fences.

Mr. J. Wade to introduce the subject by an essay.

WALTER RIDDELL,  
—Cobourg Star. Secretary.

# The Agriculturist.

TORONTO, OCTOBER, 1853.

## PREPARE FOR WINTER.

Old winter is again coming, with his piercing frosts and snow storms. If ever there was a year when farmers should look close to the management of all kinds of live stock, that time is most assuredly the present. With high cash prices for every article raised on the farm, and only a very moderate supply of hay, oats and roots, the economical maintenance of domestic animals through the approaching long winter is a matter to the farmer of the utmost importance. Our object is not to write a long, elaborate article, but simply to give timely warning to our Agricultural readers, and throw out one or two practical suggestions.

First,—Pay special attention to the comfortable housing of cattle, by the adoption of such expedients, in the absence of warm, substantial buildings, as will shelter the animals from the inclemency of the weather. This is the surest way of economizing their food and promoting their health and growth. An animal secured against wet and cold, in a clean and well ventilated place, will do better, that is grow faster and lay on more fat and muscle, upon 25 per cent less food, than under the painful circumstances in which too many cattle are placed during the long and severe winters incident to this country.

Second,—Regularity in feeding is a point of more importance than is generally thought. A smaller amount of food punctually supplied at regular intervals, with abundance of water, dry and clean bedding, will better support an animal in a thriving condition than a much larger quantity irregularly given, and under opposite conditions.

Third,—A variety or mixture of food given to stock is both economical and salutary. It is astonishing how a few turnips, mangels, carrots &c., in addition to hay or straw, promotes the healthy action of the system and a vigorous growth. Even the mere bruising of grain, or the cutting of hay or straw before given to stock, is an economical and beneficial practice; and

the cooking of cattle food by boiling or steaming, and mixing, has been found to promote largely the same ends.

The few simple suggestions, if carried into practice, as circumstances may allow, would be found exceeding beneficial to farmers, in enabling them to keep their stock through the winter with economy and success.

#### THE EXHIBITION OF 1853.

We have delayed this number in order to take some notice of the Provincial Exhibition which was held at Hamilton, on the 4th, 5th, 6th and 7th insts. The weather though threatening during the first day, cleared up on the second, and proved highly favorable. The show was a most successful one in all respects. The official Report, Prize List, and President's Address will appear in the November number. A general description of the more prominent objects is all we can give in this number. The speeches at the evening discussion, and the resolutions at the annual meeting will be found interesting.

The site chosen for the Exhibition was a delightful rolling field about ten minutes walk from the market place and finely elevated. Upwards of 30 acres were enclosed for the occasion. The inclement weather of Tuesday, and the wet and boisterous appearance of Wednesday retarded the progress of affairs a little; but by Thursday morning the ground presented a very fine appearance. Taking it as a whole, the Exhibition was a considerable improvement of that of last year at Toronto, although in some things there was not so much display, and in others no improvement upon those then exhibited. The first thing which attracted the attention on entering the grounds was a handsome first class Carriage for the Great Western Railway to the right of the gate. This was one of six carriages made by Messrs. Fisher, Williams & Brainard, for the Great Western Railway Company, and is a magnificent affair of the kind. It is about 43 feet long, by nine feet inside, with fourteen double seats and two single seats on each side. The seats are very finely stuffed and covered with a showy plush. The backs of the seats swing upon strong brass hinges, so as to allow the cars to run either way without turning. The windows, filled with fine plate glass, are made to slide up, and are protected by a jalouse frame, which also slides up at pleasure. The floor is covered with a pretty oil cloth, which gives a very comfortable appearance. The iron work of this and the other carriages made by this firm, are manufactured by Messrs. McQuestion & Co., of Hamilton and is highly creditable to the establishment. The Floral Hall, which is at all times the principal attraction, was situated on the summit of the elevation. It was 120 feet long by 80 feet broad, forming a Centre Hall about 24 feet wide the whole length, and two Side Halls also the whole length of the building. The eastern Side Hall was devoted chiefly to the flowers and vegetables. There was a good display of Annuals and Verbenas. The display of Dahlias was not so great. There were some very tastefully done

up table bouquets. There was a very pretty floral design by Mr. Kerr's gardener, filled up in the different plots with Astors, Marigolds, Verbenas, &c. There was a fine box of Annuals from Messrs. Thomson and Murray of the City Gardens, Hamilton.—Judge Campbell, of Niagara, had some beautiful Cockcombs, seemingly the same that figured at the Horticultural Show in Toronto lately, and received so much merited praise. J. F. Moore of Hamilton, had a very fine display of Balsams. Eneas Kennedy had a very good collection of plants from his own private garden. Mr. Fleming of Toronto, had a pretty fair collection of Green-house Plants. Thomas and Murray had a very pretty flowering Jasmine, very useful and suitable for a hall window; it flowers at the early part of the season and gives out a powerful and most delightfully fragrant odour. They had a fine specimen of Veronica, and a very pretty Gesnera Zebrina, a plant of beautiful foliage. The *Torenia Asiatica* from the same gardens, was a very fine specimen, with a beautiful soft blue Marmalade Flower. It grows easily and flowers freely, but requires a good deal of heat to bring it to perfection. There was a very graceful Japan Pine from the same garden. This plant is well adapted for a conservatory. The *Lantana Ewingtonii*, a flower something like a Verbena, but more variegated. The flower first becomes orange, it then fades to a fine soft pink, and from that comes nearly to a white, the flowers appearing in all their different stages in one plant at the same time. It flowers from the beginning of June all the way to winter, and is well adapted for bedding out. It has been only recently introduced. There was one plant, a native of California, termed the *Zascaneria Californica*, with a beautiful scarlet flower resembling a fuschia somewhat. This plant is also well adapted for bedding out. J. F. Moore exhibited a very healthy India Rubber plant, and one Orange tree with one specimen of the fruit upon it. There were two fine specimens of Aloe, and a very fine specimen of the *Abutilon Striatum*, with a beautiful striped well shaped flower, a considerable variety of Cacti, and a rather curious plant—the *Echin Anthony Zebrina*—from the same garden. On the opposite side of this Hall there was a large display of Cabbages chiefly from Toronto gardens. There were also Squashes in great variety, Cellery, large Beet, and also some remarkably fine Table Beet. Mr. Leslie showed a good collection of Peas and Quinces of very fine quality. In the Western Hall there was a most magnificent display of white and red Onions, the finest by far that has yet been exhibited at any of our Fairs. There were some Tomatoes of a large size, but not very tempting. There were some very fine small ones. There was a good display of white Table Turnips. The Capsicums were a very excellent. There were some good Cauliflowers, two heads especially very fine. The Chicory looked well, it was chiefly from Pear's garden, Yonge Street. The Carrots were also a good display. There were three baskets of varieties of vegetables. The Baron de Longueuil displayed some very fine Egg Plants of a large size. The Water Melons were rather an ordinary display. The Normal School, Toronto, exhibited specimens of the production of the Experimental garden. There were Cabbages, Oats, Barley, Potatoes, Corn, Carrots, Beets, Mangel Wurzel, Turnips, &c. &c., with a full report of the quantity raised, and all the particulars connected with the various specimens. The Peaches were a very good display. There were some excellent hot-house grapes from W. H. Balton's garden. Enoch Turner, and W. B. Jarvis of Toronto, and W. P. McLaren of Hamilton, had also some fine specimens. There was a very prolific specimen of Grape, we think from Mr. Lewis of Saltfleet. There were upwards of forty bunches on one



vine about three feet long. Mr. Humphreys of Toronto, exhibited an excellent basket of sweet-wax Grapes. This was decidedly the best specimen of that kind of Grape in the exhibition. There were 56 different entries of "twelve Winter Apples." The winter table Apple, made a good display. The Rib-on Pippins were very fine, there were some excellent baking Apples from Lesslie's Garden. There were seven entries of 20 varieties of Apples, some of them very fine, from Lesslie, Turner, Bruckley of Hamilton, Fuller of Hamilton, and others. Dr. Craigie's son displayed some fine specimens of Dried Plants, very well prepared. There were only a few of them displayed, the greater part of them being left in the Portfolio. The centre Hall was more especially devoted to the Fine Arts. At one corner there was a beautiful display of Artificial Flowers. Miss Campbell of Dundas, exhibited two vases of most exquisitely finished Wax Flowers. The leaves of the Flowers were all formed separately by hand, and some of the Flowers were most magnificently formed. Mrs. Beck exhibited a specimen of the New Lily—the *Victoria Regia*. Miss Merton of Dundas, Mrs. Ruthven, and others, had also specimens of the same kind of work. Mrs. Beck's Wax Fruit was very good. There was a curious specimen of ossification sent in by Captain Nichol of the Grange, Hamilton, something of the deer species. Mr. Stennet, Hamilton, exhibited some Dentistry. Mr. Date of Galt, had a large case of Edge Tools of very fine finish. There were two Electric Magnetic Machines, but we could not learn who showed them. There was an excellent case of American Cutlery. The Pen-knives seemed beautifully finished. John Baine of Hamilton, exhibited two Siws very tastefully ornamented. There was a box of Native Copper. A model of a Steamer by Wm. Brown Ship-carpenter, Chippewa, and a model of a vessel with an improved stern. There was some Powder from the Gore Powder Mills. Mr. Morrison, Jeweller, Toronto, exhibited a case of very pretty Jewellery. Messrs. Ruthven and Watson, James Street, Hamilton, had also a very good display of Jewellery, consisting of Flower Vases, Cruets, Fruit Baskets, Egg-cups, Liquor Stands, Candlesticks, Toast Racks, &c., &c. There was a large case of Stuffed Birds. P. T. Ware, Watchmaker, Hamilton, exhibited a beautiful eight-day Gold Watch, made in their own establishment from the raw material. This watch was sold for \$250. Messrs. Armour and Ramsay had a number of School Books very well got up. Barnes of Hamilton, had some fine specimens of Binding. Hughson exhibited two volumes of Fletcher's Bible, most magnificently bound. The edge gilding was done in a superior style. They had also Burns's Works done in an illuminated binding, very elaborately finished. W. H. Glasco, exhibited a case of very fine Furs in Caps and Gauntlets, &c., &c. Lawson & Brother had a case of made Clothes. One white embroidered vest looked very pretty. A. M. Titus of Branford had one suit of black, valued at £15, beautifully made up. The sleeves of the coat were lined with a new kind of French serge, of an orange colour, quilted; the inside of the coat was lined with silk and beautifully quilted. The bottom of the pants were done up with hair-cloth. There was a coat and vest of Canadian cloth, very beautifully stitched. We believe these came from Grimsby.—There was carpeting and yarns from the same quarters, but no names were attached. Mr. Secord exhibited a case of hats and furs. There were some excellent specimens of blankets and flannels from Mr. Pater-son's factory, at Dundas. Mrs. Beck had a very pretty knitted curtain. There were knitted socks from Mrs. E. D. Moore of Erindale. Mrs. Peter Jones of Brantford, exhibited some silk patch-work quilts.—There was a great variety of crochet work embroidered table covers, from Miss Springer. Millinery in

great abundance from Lawson & Brother, and from the same house two richly finished ladies' sacks. Raised work from Miss Fairclough, of Hamilton. Mrs. H. M. Spencer, of Dundas, exhibited some beautiful crocheted work in caps and collars, and Mrs. Panton, of Hamilton, had some very pretty braided child's dresses. Mrs. Silverthorn, of Oakville, exhibited two pretty straw bonnets, of domestic manufacture. There was a very beautiful crochet veil, designed and executed by Miss Margaret Sinclair, of Brockville.—There was a crochet work design of the fountain and part of the interior of the Crystal Palace, at London, very well executed. Small sofa pillows by the Misses Hills & Carpenter, of Hamilton, raised worsted work, beautifully executed. Some embroidered shirts of a superior quality, were also exhibited. There was a very pretty embroidered vest, exhibited by Mr. Cozen, of Hamilton. Mrs. Scott Burn, and Miss Burn, of Toronto, exhibited some exquisitely embroidered work. Miss Galbraith, of Hamilton had some raised worsted work, and patch-work. There was a beautiful down quilt, a very expensive article. Mr. Fleming, of Toronto, exhibited some admirable specimens of Wood Carving—one, a large figure of Time, was well executed,—but one beside it had considerably more attractions for the public—it was a little man in the Tam O'Shanter, or Souther Johnnie style, with a bottle in the one hand, and a glass in the other, in the act of filling up the glass, the liquor being represented as coming out of the bottle; the countenance had rather a mischievous appearance; he was styled an advocate for the Maine Law. There was a very neat Drawing on Wood, by Lucius O'Brien, of Toronto. The end of the Hall was covered with landscapes, portraits, and drawings of various kinds.—Some paintings of Indians, after Catlin, and several other specimens by Peter Jones, were very attractive. Mr. Reid had several well executed portraits and landscapes. There were some pretty water-colour paintings, by Wandesford. Milne, the Daguerrean, of Hamilton, had a large case of finely executed Daguerreotypes. There was a pretty Monochromatic drawing, by Mrs. J. Wetenhall, of Hamilton, and two frames composed of artificial leaves, by the same lady. Hoppner Meyer, of Toronto, and Mrs. Meyer, exhibited a great variety of Miniature Portraits and Crayons—two of these, a portrait of Mr. Strickland and a portrait of Mrs. Fitzgibbon, were exceedingly well executed. Amongst Mr. Meyer's collection perhaps Windsor Castle was the happiest. Mr. Pell of Toronto had not much of a display in his line, only some few frames, very well executed however. Before leaving this Hall it may be stated that it was well fitted up, and well arranged, and very tastefully festooned with evergreens. It proved altogether too small however, for the immense crowd that entered the grounds during the day. There would be upwards of 30,000 visitors altogether from the time of opening, and when it is considered that several thousands of these were desirous to see this Hall at one time, it will be apparent that it was much too small. There was also a great fault in its construction in not having more outlets. We imagined that this one would have been a considerable improvement upon last years, but with the exception of a little extra size there was no difference strictly speaking. It is to be hoped when another Floral Hall is to be erected that a Prize of £25 will be offered for the best rough design of a Hall to give size, comfort and easy egress. In the hope that this idea will be taken up we proceed to the

#### TENTS,

Two of which were devoted to the Mechanical Arts, the other to Agricultural Produce. In the Mechanical tents we found on entering a very fine

display of coopering. Benjamin Fuller, of Waterford, Norfolk County, exhibited a portable boring machine, well adapted for carpenter work. It seemed to bore easily and worked with great rapidity. He had also a patent sliding gate so constructed as to open with the weight of the horses feet and thus prevent the rider from dismounting to perform that operation. It looks very pretty in the model, but it is not likely to get into general repute. There was a fine sample of nails from the Hamilton Spike Works. Lawrence Lemmon of Port Robinson, exhibited a fellow-cutter, to be driven by water power. The principle was simple, and as any kind of circular may be cut by it, it can be easily applied. Its cost is \$40. There were patent scales but no name attached. William Roberts of Port Robinson exhibited a small box containing samples of the various woods grown in Canada, all carefully named in their technical order. There are sixty different pieces. The same person exhibited a saw log measurer made by himself. M. Lossing of Brantford exhibited an economical Churn and Washing Machine combined, valued at \$12. Mr. Vansickle of Oshawa had a patent rotary churn, simple in appearance, and said to be better adapted to the process of churning, as the rotary motion gathers the butter and also breaks up the cream better than the Stationary Churn. He sells them at \$8 a-piece. There were several Straw Cutters in this tent, but we saw nothing new in that line on the ground. Brown and Childs exhibited three boxes of Over Shoes, made at their establishment at Montreal. The person in attendance stated that they turn out 1,500 pairs of such shoes daily. John Todd, of Brantford, exhibited a Model for a Vertical Saw Mill for rough timber. One advantage which is claimed for this construction is, that it can cut back as well as forward, the saw having teeth on both sides, and also an improvement in the carriage. Mr. Crombie, of Galt, exhibited a very heavy Mule Saw, fitted up on the old principle. There was a good Drilling Machine here, and the Old Flax Machine was displayed. There was a very neat, well-finished Buggy, supposed to be from Galt. There was also a complete Set of large Bellows, capable of blowing for four blacksmiths' fire at one time, and worked easily by one man.—Cost about £30. J. P. Pronquay, of Hamilton, exhibited a very pretty, well-finished Family Carriage. It was made after the plan of the English private carriage to turn upon its own ground, and was prettily stuffed and quilted inside. It was valued at £150. Mr. Gartshore, of Dundas, exhibited a Steam Engine, of 15 horse power, manufactured at Dundas and valued at \$1,500. William Gordon, of Hamilton, had a very fine display of Cooper Work in Pails and Buckets Butter Dishes, and Drinking Cups. His cups were exceedingly well made. In the other tent, Mr. Kirkfield, of Toronto, had a excellent display of Whips, in various mountings, some of them valued at \$9 a-piece, and some at \$12. There did not seem to be any other whips on the ground. William Gibson, of East Market Place, Toronto, had a Set of very strong, substantial Harness, worth £20. Jacques & Hay had a French Bedstead, very elaborately ornamented with carving in natural flowers. It was ticketed for sale—value, £32 10s. They had also a Sofa, and a most magnificent Sideboard, and a Set of Dining room Chairs in mahogany, of a beautiful pattern.—These were said to have been made to order for John Young, Esq., Hamilton. Field & Davidson, of James Street, Hamilton, had a very fine supply of Saddlery of various kinds. There was one beautiful Side-saddle, finely quilted; there was a sumerset saddle and several riding saddles of excellent workmanship; horse cloths, team harness

and two sets of single harness. They had also two trunks, one very fantastically fitted up and bound with silver plaited hoop, valued at \$60, another with brass hoop less fanciful,—cost \$40. The Chipewewa Foundry had a large display of very fine stoves. Beside these stood a newly invented tin reflector or baking apparatus, made by John Dean of Vienna. He guarantees that it will bake seven loaves of bread with one small bit of hardwood, and warrants to cook all sorts of meat economically and well,—cost \$12.

#### CATTLE.

The show of cattle was good, both as regards quantity and quality, each different breed being well represented. Among the Durhams were a number of fine Bulls, and we think it would be difficult to give a decided preference to any one animal, at the same time we cannot but mention one shown by Mr. Wade, of Port Hope, and "North Star" belonging to Mr. Jones. There was also a very handsome yearling exhibited by the Hon. Adam Fergusson, which fully sustained his character as a successful breeder. Mr. Parsons, of Guelph, also showed some good Cows and Heifers in this class, and also among the Grade cattle. There was also a large show of Devons, Messrs. Ferrie and Tye, as usual, standing well forward. Mr. Locke, of St. Thomas, also showed some good animals. Mr. Ferrie had two beautiful two year old Bulls, one of which we believe he has sold for \$75. Mr. Ewart, of Dundas, was the largest exhibitor of Ayrshire cattle, having on the ground eleven head, all well worthy of notice. We observed also some very fine ones shown by Mr. Webster, of Fergus. The Foreign Cattle exhibited were not numerous, but of good quality, though they looked jaded by their long journey, especially those which had crossed the Lake during the late squally weather. The best of them belonged to Mr. Hardie, of Munroe County, near Rochester, who had a large Durham Bull (imported we believe) and a Heifer one year old, which weighed 1200 pounds.

There were eight entries for working Oxen, but only four yoke were on the ground on Thursday. The show of Fat Cattle was small indeed, but some of those on the ground made up in size for the want in number. The largest of all was a Durham Ox shown by Mr. Ben. Miracle, near Niagara, and stood above seventeen hands high.

#### THE ANNUAL MEETING FOR DISCUSSION.

On Thursday evening, the 6th instant, the friends of Agricultural improvement met to interchange their views on such topics of general interest as might be introduced to their notice. Professor Wilson, the English Commissioner to the New York Exhibition, was expected to be present, and it was also stated that Dr. Rolph would take part in the meeting. The honorable gentleman did not make his appearance, having been somewhat fatigued by his recent tour, and the presence of Professor Wilson being likely to make up for all deficiencies. The remarks of the Professor and the gentlemen who followed him were listened to with great attention. We copy from the report of the *Globe*.

Col. Thomson, President of the Board of Agriculture, said that in the absence of Mr. Mathie, the President of the Agricultural Association. Mr. Sheriff Trudwell, the Senior Vice-President, had consented to assume the duties of Chairman.



Sheriff TREADWELL, having taken the chair, and expressed his regret that Mr. Matthie was not able to be present, congratulated the citizens of Hamilton on the position which their city now occupied. He was in the city twenty-five years ago, and at this moment he could only recognize in it one building which was then erected. (Cheers.) Now they occupied a high and enviable position, and he believed it was to agriculture they were mainly indebted for it. During the evening he trusted they would have an opportunity of listening to some valuable lectures by gentlemen of eminence present, and he would therefore detain the meeting no longer, but at once introduce to them, Professor Wilson, one of Her Majesty's Royal Commissioners to this country.

Professor WILSON, who was warmly received, said—I assure you I came here this evening more to learn than to tell you anything. Had I known some short time ago that the Agricultural Association of Upper Canada was desirous of hearing me express an opinion on the mode of farming that is carried on in the old country, I would have got together a few ideas to lay before you, but till I arrived here, I had not the slightest notion that anything of the sort would be expected of me, and, therefore, I can only make a few comments on what I have seen to-day. And of all the things exhibited, those that have struck me the most, and which will probably admit of the least difference of opinion, are those implements with which the grounds have been very respectably filled to-day. In regard to the general farming of the country, I am not competent to form any opinion. I have seen somewhat of the farming of the States, but the farming of Canada I have had so little opportunity of observing, that I do not feel prepared to express an opinion on it at all. But as I have seen on the ground to-day many implements which I have also seen in the States, and many of which have come from the old country, I think I may venture some remarks upon them. In doing so I shall follow the order in which I happened to see them. First of all, at the extreme end of the grounds, I saw a variety of churns, made by a man with a very eastern looking name—Rajaplie I think. In a pastoral country like Canada, butter-making is an important pursuit, and to make butter well, we ought to understand the principles on which it should be made. And I do not think that these are very correctly understood either by the makers of churns, or by the persons who use them, otherwise we should not have so many absurd machines for the purpose brought under our notice. Now, as regards the making of butter, it is in the first place rather an improper term to make use of, because the butter is already made, and all we have to do is to effect the separation of one portion of the milk from the other. The cow makes the butter, and we have to separate it from the butter-milk which the cow gives us also. The particles of butter being much lighter than the fluid in which they are suspended, come to the surface in the shape of cream, which consists of about one half butter, and one half of the substance in which it floats. The only way in which we can separate the butter from this substance is by mechanical agitation. We want a machine then which shall mechanically agitate the cream in the best and most economical manner. But there is another thing required to facilitate the separation, viz., a right temperature. Theory teaches us and practice confirms it, that butter comes better at one temperature than at another, a moderate temperature being better than when it is either too hot or very cold. Experience has established that a temperature of about 60° is the best at which butter can be made. In constructing a churn, therefore, we have two points to attend to. We must have first, a means of regulating the temperature, and secondly, a means of mechanical agitation. In the churns exhibited to-day—and I can

say for them that they are very much better than most I have seen—there is a very good means employed for regulating the temperature, the body of the churn being placed in a vessel larger than itself, and the space between them filled with water, either hot or cold, according as it is necessary to raise the temperature of the cream to 60° in winter, or to lower it to that point in summer. The next thing required is mechanical agitation, but the mode employed in this churn to effect this is not so good as it might be made. The dasher is of a very imperfect description, and does not give you anything like the power which a slight alteration in its shape would yield, and besides does not avail itself of the mechanical aids afforded in machinery by multiplying wheels. Were these introduced, the dashers would turn six or eight times for each turn of the hand instead of once, and the butter would be made much more quickly, and with a less expenditure of physical power. At the Great Exhibition of 1851 of all the churns brought forward there was only one fully to my mind, as combining the two essentials I have named, and that one came from France. I did all I could to get some of the machine makers to purchase it, but as none of them would do so, I purchased it myself, and as I have used it now for two years in my own dairy, I am quite certain as to the correctness of the principles on which it is constructed. At the Great Exhibition it got the prize both for quality and time. As regards the time, I consider that butter is always best made, when the churning occupies about twenty minutes. Alongside of these churns I saw to-day a very good field-roller. It was an iron roller, but the cylinder, instead of being solid, was divided into six or eight different sections. This, it is obvious, is a great improvement on the solid roller. Just in front of this Rochester stand I was very much pleased to observe a chaff-cutter, very superior in construction to any I have seen since I have been on this continent. I cannot at all admit the advantage of those chaff-cutters which I saw so generally in use in the States, consisting of a small cylinder armed spirally or horizontally with fixed cutting knives, which cut merely by pressure against a leathern roller placed above them. They might do to cut particularly dry straw only one length, but a farmer wants a chaff-cutter for other purposes than that. He wants it to cut hay as well as straw, and damp hay or straw as well as dry. I saw one here made by a firm, Kirland & Millington, on the same principle as the chaff-cutters which are so extensively used in the Old Country. The cutting part consists of a large fly-wheel, on the radii of which are fixed cutting knives of a scymiter shape—concave instead of convex as they are sometimes made. The machine has got three knives and when the fly-wheel is turned round, these come successively in contact with the matter exposed to them, and the straw or hay is cut off and falls into the track prepared for it. One defect in the machine is, that the knives do not give a continuous cut,—that is to say, one knife leaves off cutting before another begins, and both the speed and the power of the machine are thus diminished. And the worst tendency of the check is, that it does not act vertically but laterally. The faster you go, the greater lateral action you give to the fly-wheel. If this fault were remedied by the knives being made a little longer, the speed would be more equal, and the strain on the machinery would be far less. Alongside of this I saw another machine, brought over to this country some two years ago by a gentleman who deserves all thanks for having introduced this and other machines on the ground—Mr Boulton of Toronto. Although in this machine there are only two knives, the cut is continuous, and by a very simple arrangement in the cogging of the wheels, you can lengthen the cut from a half-inch, suitable to horses—to two inches, suitable for ruminating cattle—or four

inches, the length required for litter. Having mentioned Mr. Boulton's name, I would call your attention also to a horse hoe, which in England we find to be a very essential accompaniment to a drill as it enables you to keep your land clean—one of the essentials of anything approximating to good farming because no man can thrive who grows two crops, and can only send one of them to market. (Hear, hear.) It is a very simple contrivance, and if you only arrange that the width of the horse hoe between the wheels, shall be the same as that of your drill, wherever it goes, however tortuous may be its course, you may thus clean your wheat with great facility. I have been accustomed to hoe out some 400 acres every spring most effectually, at an expense of about 6d. an acre, instead of having to pay 3s. or 3s. 6d. or 4s. for hand hoeing. It enables us also to get over the whole ground much more speedily, than we would often be able to do, if we had to depend on manual labour. I was very much pleased to see a subsoil plough, an instrument that has achieved a great renown in England. There is now, I think, scarcely any difference of opinion as to the great advantages of subsoiling, provided the land is drained. I believe that this which is called Reid's subsoil plough will give the farmer all the advantages he desires. It is very effective in its operation—inexpensive in its cost—not liable to get out of order—and very easily worked. The one I am speaking of is sent, I believe, by Colonel Marks, and it can be had for some fifteen or twenty dollars. Adjoining to this is another implement, perhaps less known—the scarifier or broad-share plough, made by a Mr. Benthall. It is somewhat difficult to describe it but it is a very effective instrument, which may be put to various uses. In England it is probably chiefly used in shearing the stubbles, after we have taken our grain crop off the ground. By shearing the stubble an inch deep, you cut up and destroy all the weeds. Seeds which are lying under the soil ready to spring up next year, are brought to the surface, and springing up in the autumn are destroyed by the winter's frost. This broad share plough is also a good thing for paving turf, and by some slight alterations, which it will readily admit of it can be turned into a subsoil plough, or it may be converted into a horse-hoe, that will hoe two or three rows at a time. In short it is a very useful instrument. The sale of it in England is very extensive and there are very few farms of any extent without it. The question of ploughing would give a man enough to talk about for a week, and I will therefore only notice one or two peculiarities which struck me as being improvements, and which I shall be very glad to adopt when I get home. There was a plough, made by Baron, of Norwich, with a very good arrangement of what is called in this country the clavis, or what is called in some parts of England the bridle. Instead of any of the complicated arrangements of screws, and nuts, generally employed, the whole arrangements of depression and lateral action are determined by two screws, one vertical and the other horizontal. By means of the vertical screw, you depress the action rod, or elevate it, to suit the depth and style of land you are ploughing; while by means of the horizontal screw you are enabled to set your plough to the land in the way required; I think we shall be glad to call it the Canadian system when we get it introduced into England. I also saw what I believe to be an entirely new machine made by a man by the name of Anderson, for dropping potatoes. It was a very simple mechanical contrivance, and cannot but be useful in a country where labour is of importance. — I was also very much pleased with a very simple form of a hay rake, made by a Mr. Harris. It seemed quite as effective as any of the others—simple in its construction, and consequently less expensive, and

less likely to get out of order. Implements of that sort we do not use much in England, where we are obliged to throw our grass about considerably after it is cut, and we use a hay making machine which throws the grass all over the field, and then we usually draw it together with one of these toothed machines. But I have seen its use in America, and I think this one exhibited by Mr. Harris, will be an improvement on those generally employed. I was also much struck by the drill made by Messrs. Adkins, Elsworth & Co., of Hamilton. The arrangement seemed very suitable for the purpose for which it was intended, and the price at which they are prepared to make it is not at all high. At home we find it most essential to use drills, and even in a young country like this I am sure it would pay a farmer well to drill his crops just for the purpose of keeping them clean. Alongside of this, amongst the other things, I saw a reaping machine made by the same firm. This was similar in its construction to all those very imperfect machines which I have seen before, except that in one part Mr. Adkins attempted to achieve, what Mr. Atkins, of Chicago, has already achieved—in the shape of a self-acting rake. The Chicago maker invented a very ingenious mechanical rake, one of the prettiest things I have seen for a long time, and at the same time, I believe, one of the most useless. In the contrivance of your townsman, I do not think he has got quite the thing he wants, but it only requires one little alteration to make it perfectly effective, as far as a machine of that sort can be. But, although I am pretty well acquainted with reaping machines generally, I am opposed, upon principle, to the whole of them. I am told that a good man with a cradle and scythe, will cut down — I am afraid to tell you how much I have been told he will do in the States—(laughter)—but I believe a good man will cut down from two to three acres a day. Where the crop is light, and the straw much drier than it is in England, I have no doubt a man can cut down three acres. On the other hand we have an expensive machine, requiring two men and four horses to work it, that certainly cannot cut twelve acres, the work of four men with cradle scythes. This surely is no triumph of mechanical skill, and we must have a better article before we can use it to much advantage. I think the whole principle of the machine is defective. In the first place, we have got a lateral traction—the drawing power being applied to one side, instead of the centre of the machine. This surely is an absurdity. No one would handle the rake with the handle stuck in one end of it. Then, when you take it into the field, it cannot work, till a man goes before and cuts away a width equal to that of the machine all round the field. And besides this it can only work in a circle. Still I believe there may be some cases, in which it may be advantageous to use it. In the Western Prairies, and it may possibly be the same in Canada, labour cannot be had at any price, and if you have four horses reduced to the value of two men, it may be of use. I should have mentioned too that I think the principle of the reciprocation cut—the cut backwards and forwards is a false one. In every motion of that sort the mechanic will tell you that there are what he calls the dead points, that is, points in which the knife is in a state of quiescence, and during that time the machine is still being pulled on by the horses. The result is that during that period the straw is not cut, but is either wrenched off or dragged along, and every half hour the machine has to be pulled up, to allow the wheels to be untied from the heads of grain and straw twisted about them. I think we have not been fairly treated



in this matter of reapers. In 1851 two reapers came over from this continent to England, just at the time when the crutches had been taken away from the farmers and we had to stand on our own legs, and began to think that we must do something. It was just at that time that the American machines came to us and being heralded in with that modesty so peculiar to our cousins, we thought it must be some thing very extraordinary. I never saw the agricultural mouth open so wide, and it swallowed it in at once. (Laughter.) It turned out, however, on enquiry that, instead of reaping machines coming from the continent of America to us, they had actually gone from us to America, that Hussey's machine was merely a bad copy of the reaper invented by the Rev. Mr. Bell of Carmylie, and used on his brother's farm in Forfarshire since 1828—and that of McCormick's machine there was an exact figure and description in the *Mechanics' Journal*, for November 1825, a patent having been taken out for it by a man of the name of Ogle. I give the Americans all credit for drawing attention to those machines. Had they only done that I would have been satisfied. But to my great annoyance, I have twice heard public men in the States go a great deal further. In one case I heard a gentleman of high standing in science, a man of whom any country might be proud, refer to these machines as a wonderful proof of the ingenuity of his countrymen, and how far they were before us, and how much indebted we ought to feel to them for having introduced our own machines to us. (Laughter.) And at Saratoga, the week before last, I heard a most excellent and admirable address, delivered by a gentleman who is a credit to the United States. It was well conceived, characterized throughout by perfect good taste and good feeling, and most ably delivered; but he could not keep away from these reaping machines, and while referring to them as a triumph of American ingenuity, he turned round and bowed to me, as if I would corroborate him, although I could do nothing else than smile at it. But more than this, he said we had to thank the Americans for having introduced these machines, notwithstanding that for half a century our Parliament had offered a reward for the same thing! (Laughter.) This was purely imaginative, no such reward having ever been offered. The fact is, that in 1835, five of Bell's machines were made at Dundee, and brought over to this country, and sometime afterwards Hussey's machine was brought out, the same as Bell's, with some few alterations that were the opposite of improvements. Instead of putting the draught in the centre of the machine, as Bell does, Mr. Hussey puts it at the side of his; and I leave it to any mechanic to say, which is the most effective plan for pulling anything forward. (Hear, hear.) Again, with Bell's we have only to send in a man to cut sufficient room to admit the machine, which will go in any direction we please. The difference of Hussey's in this respect I have already mentioned. But I have one more fact to tell you, which amply compensates me for all the annoyance and anxiety I have had about these reapers. It is this, that at the great agricultural show in England, this year in Yorkshire, and at the Gloucester meeting of the Agricultural Society, Mr. Bell, the Scotch farmer, brought forward the machine which he has used on his farm for 25 years, and in the open field beat both McCormick's and Hussey's. I have got the papers containing their accounts of this, (*Gardner's Chronicle and Agricultural Gazette*, Aug. 13, and Aug. 20, 1853,) and will leave them in the hands of your society. The Jury in both cases were unanimous, and the gold medal and twenty guineas were given

for Mr. Bell's machine, while McCormick's and Hussey's were only "commended." (Cheers.) I am glad of the opportunity of making this statement, and, as I see a Reporter present, I have some hopes of getting it into print. I said the same thing several times in the States, but I never got it put into print there. (Laughter.) The learned Professor then thanked the audience for the attention with which he had been listened to, and resumed his seat amidst hearty applause.

Professor BUCKLAND wished to make a remark in regard to some of the implements to which Professor Wilson had alluded. He begged to state distinctly, as it did not appear on the cards, that Bentall's scarifier was imported into this country by Mr. John Arnold, of Toronto, and that the small plough next it, for marking drills and earthing up potatoes, was also introduced by that gentleman. Mr. Arnold, he was authorized to state, was quite disposed to sell them at the price he gave for them in England, without, he believed, adding anything for freight and incidental expenses. He might likewise state that the subsoil plough to which Mr. Wilson had alluded, and which would be found, with the other two implements, to the west of the floral hall, was introduced by the excellent ex-president of the Association, Mr. Marks. When he (Mr. Buckland) left England, it was considered the most efficient subsoil plough then known, and he believed that nothing had since been introduced to displace it. Castings had been made of it in Toronto, and in a very short time they would be able to produce the article at a very cheap rate.

Col. THOMPSON said that his Excellency, Lord Elgin, had placed a prize at the disposal of Mr. Street, to be given in such a way as the Association might consider most beneficial to the country. It was resolved to offer it for a tile-making machine, but none had been produced. A gentleman, however, was now present, who had only arrived that evening, bringing with him a model of a machine of which he was the inventor. The production of the model would not entitle him to the prize, but the meeting would be glad to give him an opportunity of showing by it how the machine itself would work.

The gentleman referred to by Col. Thompson, then took his place on the platform, and by means of this model explained the *modus operandi* of his machine, which, from his explanations, appeared to be sufficiently well adapted for the end intended. He stated also his design to settle in this country, with a view to pushing his invention here.

Professor BUCKLAND having explained the reason of the absence of the Minister of Agriculture, Dr. Rolph, whom they had expected to be here, by stating that it was owing to the fatigue he had experienced after travelling over a rough part of the country during the last two or three weeks.

The CHAIRMAN said he observed in the room a member of the Board of Agriculture—Mr. Christie—and he begged to invite him to the platform.

D. CHRISTIE, Esq., M.P.P., being thus called upon, said they had heard a great deal of interesting matter this evening in reference to Agriculture from the distinguished person who had done them the honor of attending. (Cheers.) He thought, however, that Prof. Wilson had somewhat under-rated the power and effectiveness of the reaping machinery, and he considered that the remark made in regard to the Western States applied, and that most decidedly, to the Province of Western Canada. Particularly during the past year, a great deal of difficulty had been experienced in procuring labor; many of them having had to pay at the rate of ten York shillings, and, in some cases, a dollar and a half a day. In these circum-

stances, where the crops had to be taken off the ground in a very short time, and where there was a great scarcity of hands, it was found absolutely necessary to make use of a reaper, and though the machines they had might not be so perfect as they ought to be, still they were a decided gain in the way of harvesting. There was another instrument that he would have liked the Professor to have alluded to at more length—the cultivator or horse-hoe. He was satisfied that they ploughed their land a great deal too much. The delving process was much more natural and effective than the process of ploughing. However, they had not as yet a machine, that would perform that work, but so long as they remained without it, they could do a good deal with the cultivator. By using this implement freely, even very dirt-land could be brought into right condition and kept thoroughly clean. The soil, also, by being exposed to the atmosphere, was made much more fit to receive the seed. A great deal might be said as to the other implements exhibited. He believed he never saw so large and so good a collection of ploughs as was exhibited. (Applause.) He thought that the agricultural implements generally reflected great credit on Western Canada. He might say a great deal also with reference to the very fine stock exhibited to-day. The present exhibition, in that respect, was superior to any other they had ever had in Western Canada. Take the Durham cattle for instance, and he did not think they could be beaten even in the State of New York, where they had so large a number of fine animals. Take the Devons again. He had never seen so large a collection of fine thorough-bred cattle as there were among these to-day. The horses also were a splendid collection, and in the department of sheep too, they had a very pleasing evidence of the spirit and enterprise that were now being displayed by the farmers of Western Canada. He saw also a number of very fine pigs. He hoped the farmers of Western Canada would profit by this institution. He was certain that if it kept up its character, agriculture in Western Canada must prosper. Agriculture was the first and most important profession in the country—engaging as it did about eight-tenths of the whole population of Western Canada. If the people were friends with themselves, by promoting these agricultural associations, and encouraging the growth of agricultural science, they would very soon indeed render Upper Canada one of the finest portions, not only of the Western Hemisphere, but of the world. (Applause.)

Professor Wilson said he quite agreed with what Mr. Christie had said in regard to ploughs. He had not seen so good a collection of them on this side of the Atlantic. He agreed with him also that the system of ploughing was bad, but they were beginning now to leave it off as fast as they could, and in the steam digging machine now brought into operation, they imitated as nearly as possible the action that was given to the spade by the muscles of the delver.

On the motion of Col. THOMPSON, seconded by Mr. CHRISTIE, a vote of thanks was passed to Professor Wilson for his kindness in attending the Show, and for the very valuable hints he had communicated.

A vote of thanks was also passed to Mr. Sheriff Treadwell for his conduct in the chair, and the meeting separated.

The peach originally was a poisonous almond. Its fleshy parts was then used to poison arrows, and it was for this purpose introduced into Persia; the transplanting and cultivation, however not only removed its poisonous qualities, but produced the delicious fruit we now enjoy.

## THE ANNUAL MEETING.

The annual meeting of the Directors of the Association was held at Hamilton on Friday forenoon on the grounds—Mr. Sheriff Treadwell, 1st Vice-President, in the chair. George Buckland, Esq., Secretary.

The following is a list of the Delegates present:—Russell, Archibald Petrie; Lanark and Renfrew, Robert Bell, William Wallace; Frontenac, Baron de Longneil; Prince Edward, J. P. Roblin; Ontario, Ebenezer Birrell; York, J. P. Wheeler. G. D. Wells, Simcoe, Dr. Press; Halton, Thomas Douglas; Wentworth, Thomas Davis, Joseph Webster; Brant, Geo. Stanton, Charles Purley; Wellington, John McCrear, James Wright; Lincoln, Judge Campbell; Welland, John Lemon, Sr.; Middlesex, J. B. Askin, T. C. Dixon. Elgin, Isaac Minor, James Armstrong; Oxford, John Burwick.

### RESIGNATION OF THE PRESIDENT.

The Hon. ADAM FERGUSSON commenced the proceedings by reading a letter which had been received by the Secretary from Mr. Matthie, the President of the Association. Mr. Matthie stated that, in consequence of severe indisposition, he found himself unable to continue to discharge the duties of his office, which he begged therefore to resign. At the same time he continued to feel, and would ever do so, a deep interest in the Association, believing that its success was intimately connected with the growth and prosperity of the Province.

On the motion of Mr. FERGUSSON, seconded by Mr. MARKS, a resolution was adopted, expressive of the deep regret felt by the Association, that Mr. Matthie from ill health could not continue to discharge the duties of President, and tendering him their thanks for the zeal, energy, and fidelity which had characterized all his exertions to promote the objects of the Society.

### OFFICE BEARERS OF THE ASSOCIATION.

Mr. Sheriff Treadwell, first Vice President, was elected President for the ensuing year. David Christie, Esq., M.P.P., first Vice President, and William Niles, Esq., Warden of the county of Middlesex, second Vice President. R. L. Denison, Esq., was re-appointed Treasurer.

### THE SHOW OF 1854.

Sheriff ASKIN, seconded by Colonel Thompson, then moved that the next Provincial Show be held in the town of London.

The SECRETARY stated that last evening he had received a communication from the County of Middlesex, informing him that if the Exhibition were held in London, in 1854, the County of Middlesex had resolved to subscribe £500, the town of London £500, and the county of Elgin £200, making a total of £1200; besides this it was expected that £300 would be raised by private subscriptions.

Mr. NILES, one of the Directors of the Great Western, assured the meeting that the railroad would be open by the time of meeting next year, and that no charge would be made by the Railroad for any of the implements carried by them to the Show.

The motion was then carried by acclamation, several of the Directors expressing their high sense of the liberality displayed by the local and railroad authorities.

After some discussion as to the best time for holding the Show, the fourth Tuesday, or the 20th of September was fixed upon for next year.

Resolutions were then passed, giving the thanks of the Association to the Mayor and Corporation of Hamilton—the Hamilton Local Committee—Mr. Commissioner Winder and the Canada Company for



their prize of £25 for wheat—the ladies of Hamilton—the Judges—the proprietors of the grounds—the citizens of Hamilton for the manner in which they had promoted the exhibition and for the liberal hospitality they had extended to visitors—the Press—T. C. Street, Esq., M.P.P., for his prize for the improvement of the breed of horses—and the Counties of Westworth and Waterloo for the donations they had made to promote the present exhibition.

The BARON DE LONGUEIL announced his intention to give a prize of £10 at the next Exhibition for the best Hereford Bull, not less than two and not more than four years old.

SALE OF LIQUOR ON THE SHOW GROUNDS.

Mr. J. P. ROBLIN begged leave to throw out a suggestion, that in future no liquor should be allowed to be sold on the grounds. If he did not get a pledge to that effect, he would move a resolution, and get a vote on it. He had seen four people lying on the ground in a state of beastly intoxication—an exhibition that illy harmonized with the occasion.

The Hon. ADAM FERGUSSON said he was glad to hear that among the 20,000 people assembled, Mr. Roblin was only able to discover four persons intoxicated. He was a devoted friend to temperance, but he would not go the length of preventing a thirsty man from getting a glass of grog, if he wanted it.

Mr. ROBLIN said he had seen more than a hundred people worse of liquor; but when he spoke of the four men, he referred to one particular case. He begged to move a resolution to the effect he had stated.

Mr. BELL seconded the resolution. He believed that on such occasions as this, a great deal of evil was caused by giving facilities for procuring intoxicating liquors. The number of drunken people he had seen during the last day or two, was a disgrace to the neighborhood. He had been present at the Boston Jubilee, where 300,000 persons were assembled, in addition to the ordinary population of the city, and he had not seen there one-tenth of the number of drunken men that he saw yesterday.

The BARON DE LONGUEIL said that the Boston people, if that were true, must have very hard heads, as, for one item alone, he had seen a bill for 6,000 bottles of champagne drunk on the occasion referred to. (Laughter).

Col. THOMPSON would be sorry that a charge of drunkenness should be allowed to go forth uncontradicted against the yeomanry of that part of the country. It should be remembered that a great many of a class addicted to the use of ardent spirits were employed on the canal, and he was sure that it was among these that the instances of drunkenness referred to had been observed. He thought it was impossible for the Association to exercise a control over this. The matter should be left to Temperance Societies, or, if they chose, let the question be determined at the next election. If the country should be in favor of a prohibitory Liquor Law, then let it be enacted. If the majority of the people of Canada were of opinion that not a drop of liquor should be sold in the whole country, let a law be passed to that effect; but it only wasted time, and called forth unpleasant feelings to discuss the matter here.

Mr. ROBLIN, after what had been said, consented to withdraw his resolution.

Messrs. Thompson, Buckland and Denison, were appointed a committee to revise the by-laws of the Association, and report at next annual meeting.

A vote of thanks was then passed to Mr. Trendwell, for his conduct in the chair, and the meeting separated.

PRIZE ESSAYS ON CHEESE AND BUTTER MAKING.

We have much pleasure in giving publicity to the following:—

A. S. Arnott, Esq., P. R. Wright, Esq., President of the Society, and James Sutherland, Esq., offer the following premiums, to be competed for by the Ladies of the Township of Hamilton.

For the best Essay [in detail] on making and curing of Cheese	- - -	£1 5
For the best Essay [in detail] on making and preserving Butter	- - -	1 5

The Essay to be sent to the Secretary before the first of November, each Manuscript to be accompanied by a letter containing the name of the author, and these letters will not be opened until after the Judges have awarded the Prizes. The successful Essay to be the property of the Farmer's Club. The Judges to be Messrs. Thos. Page, A. S. Arnott, P. R. Wright, and James Sutherland.

WALTER RIDDELL,  
Township of Hamilton, Secretary.  
Sept. 20th, 1853.

REPORT OF CROPS, &c.

The following extracts are from a letter we have just received from Mr. Walter Riddell, dated Sept. 27th. They refer to the County of Northumberland, but they have a much wider application, in several a general one, if the information we receive is correct.

I have a little to say with regard to Agricultural matters; our crops have been all secured in excellent condition, our fall wheat was most abundant, our spring wheat was, I think, very near an average crop though not so strong as last year. Oats are generally complained of as light, my own crop was a full average one. Barley I think was a far crop, and Peas a good one. Potatoes will be light, and I observe some rot amongst mine. Carrots where sown early are good, and even late sown ones have done better than could be expected. Turnips are very unequal, some fields very good others none at all, my own are very poor—the worst crop I have had in ten years. I have some cabbages and they are bad—the dry weather destroyed these. Mangel Wurzel seem to have done the best of any of my root crops this season. We have had some fine rains lately—our pastures

have revived wonderfully since the rain came, which is of great benefit to our stock.

Fall Wheat has got a first rate chance, the rain has brought it away well—where sown early it looks beautifully. On the whole we have abundant reason of thankfulness to the bountiful Giver of all good for sending us an abundance for man and beast.

#### THE WHEAT FLY.

To the Editor of the Canadian Agriculturist.

DEAR SIR,—I enclose in a quill some insects that are making considerable ravages among my Wheat. As editors of Agricultural papers are generally expected to know all things, I apply to you for information on the following points:—What is the real name of the insect—it is called a weevil here. Is the small orange coloured one the same kind as the two caterpillar looking ones enclosed. (I ask this as seven or eight years ago there was quite a number of the large kind among our wheat here; but I did not observe any of the small orange coloured ones. Will it destroy the grain after it is ripe and put in the barn? Is there any known preventative for it? Is it the same wheat fly that made such destruction among the wheat of Lower Canada some years since? Dear Sir, I am sorry thus to trespass on your valuable time which must be fully occupied otherwise, but as the questions must be of vast importance to many of your readers besides myself, if you could answer them in your next number, you will confer a great favor on

Your most obedient servant,

WALTER RIDDELL.

#### REMARKS.

The proper name of the insect to which our correspondent refers, is the Wheat Fly, or Midge; (*Cecidomyia tritici*). It is a parasitic and dipterous insect, and belongs to a genus which composes several distinct varieties of flies that deposit their eggs in the flowers and ears of a number of cereal plants.

Our correspondent has enclosed in a quill several of the maggots or larvæ produced from the eggs of the Wheat Midge: these maggots injure the young ovary of wheat, and consequently prevent the grain from arriving at a healthful maturity. The injury therefore produced by this insect is done previously to harvest—preventing the proper ripening and development of the grain. Whereas the corn weevil, strictly so called, (*Curculio granaria*) is injurious to grain after it is harvested and thrashed; particularly when stowed away in large quantities either in the granery or board of ship.

The wheat midge is sometimes confounded with the Hessian fly (*Cecidomyia destructor*) an insect altogether different in its habits and modes of inflicting injury on grain. The former impairs the vitality and stunts the growth of the grain in the ear; the latter deposits its eggs and produces its larvæ in the sheaths of the Wheat stem in the lower joint, when the young insect is fully matured, preventing the proper growth and ripening of the straw by absorbing the natural juices, necessary to the full maturity of the ear. It was this insect, we understand, that produced such havoc in the wheat crop of Lower Canada and the Eastern States some years ago, when it was deemed expedient to relinquish the culture of that grain for a number of years.

As to preventatives it is exceedingly difficult in practice to apply an effectual remedy. From our imperfect acquaintance with the habits and modus operandi of many insects injurious to the farmer, the question of providing antidotes is yet involved in much obscurity, but the progress of knowledge arising from some minute and accurate observations belonging to the natural history of these depredators will doubtless throw increasing light on this difficult and, at present, obscure and mysterious topic. In the case of the wheat fly, early sowing has been strongly recommended, and exposing the soil in which the pupa are supposed to be embedded, to the action of the frost. Professor Henslow, (if we remember correctly,) recommends the employment of the fine sieve in separating the larvæ of the Midge from the grain and chaff, and then to burn the former. In the case of the Hessian Fly, he suggests the burning of the stubble on the ground; a practice that has been subsequently tested, and strongly recommended.

We hope soon to be in possession of Mr. Curtis's admirable papers on these subjects, which appeared a year or two ago in the Journal of the Royal Agricultural Society of England, when we will give the matter a more extended consideration.

We are glad to find from a subsequent communication received from Mr. Riddell, that the ravages of the Wheat Fly have not proved so disastrous as he seems at one time to have an-



ticipated. Although his last letter was not written for publication, we are tempted (trusting to his forgiveness) to transcribe one or two paragraphs for the information of our readers.

"I do not think the *weevil* has materially injured our wheat in this neighbourhood, it was certainly not worse in Spring wheat than it was last year, and though I think it was worse in the Fall wheat than it was last season, yet the crop being so abundant it will not be much noticed. There was least weevil in the Mediterranean Wheat with me, I thought there had been more in it as I could not find any while wheat was growing, but on thrashing some a few days ago, I found some in fanning mill after cleaning up.

I do not know whether you have any *museum* for preserving grains or not, but I think it would be very desirable to have samples on the straw of all the different varieties of wheat and other grains grown in the province—and an account of the soils for which each is best suited. I would send you if you should wish it, small samples on the straw of all the different kinds of grain I grow or could procure. A collection of grains from the different parts of the province would help to corrupt the names as I am convinced that the same variety of grain goes by different names in different parts of the country.\*"

#### REAPING MACHINES.

"As far as my own experience of reaping machines goes I am of opinion that the cutting principle of Hussey's is very good, cutting clean and well. The greatest objection I have to it, is, that it requires to be bound up as fast as cut, as the sheaves lie right in the track. McCormack's reaper lays the sheaves on one side, so that a whole field may be cut without binding; but then I don't think that the cutting principle is near so good, and I think the whole machine is more liable to get out of order. I think a machine that would be most useful to the generality of farmers would be one that would allow of cutting and laying the sheaves on one side, as it is not easy to hire hands to keep a machine going, and is often not convenient for neighbours to exchange them, and should anything go wrong with a machine it is a great loss to a farmer to have all hands idle, even for an hour in harvest. I think there has been far too much desire shown for mere speed, both with reapers and thrashing machines, whereas, had there been more desire shown for good compact machines that would do good work with few hands, it would be far better, the mere object of speed being a secondary consideration."

Mr. E. R. Breisach, of Germany, the inventor of wood gas, has arrived in the United States. He claims this to be a great improvement upon the present mode, both in the economy of the process, and in the quality of the gas. The cities of Basle in Switzerland, Heilbrun in Wurtemberg, and Baireuth in Bavaria, are lighted with wood gas.

\* We are much obliged to our correspondent for his kind offer and gladly accept it. It is the intention, we understand, of the Board of Agriculture to commence the formation of the Museum forthwith, and every kind of aid will be gratefully received.—[Ed.]

#### PRODUCTIVE FARMING.

In a treatise on Productive Farming just issued from the press, the following observations occur:

It is in vegetable as in animal life; a mother crams her child exclusively with arrow root—it becomes fat, it is true, but, alas! it is rickety, and gets its teeth very slowly, and with difficulty. Mamma is ignorant, or never thinks that her offspring can not make bone—or what is the same thing, phosphate of lime, the principal bulk of bone—out of starch. It does its best; and were it not for a little milk and bread, perhaps now and then a little meat and soup, it would have no bones and teeth at all. Farmers keep poultry; and what is true of fowls is true of a cabbage, a turnip, or an ear of wheat. If we mix with the food of fowls a sufficient quantity of egg-shells or chalk which they eat greedily, they will lay many more eggs than before. A well-fed fowl is disposed to lay a vast number of eggs, but can not do so without the materials for the shells, however nourishing in other respects her food may be. A fowl, with the best will in the world, not finding any lime in the soil, nor mortar from walls, nor calcareous matter in her food, is incapacitated from laying any eggs at all. Let farmers lay such facts as these, which are matters of common observation, to heart, and transfer the analogy, as they justly may do, to the habits of plants, which are as truly alive, and answer as closely to evil or judicious treatment, as their own horses.

#### THE PLUM.

Good healthy trees must be raised from stones of the common wild plum. Put them in the ground before winter, and cover lightly with earth—the frost will open them. In April, plant them in rows six inches apart, with sufficient space between the rows to introduce the plough. Turn the soil from the trees till they are a foot high; go through them with the cultivator when necessary, and level the ground. It may then be ploughed towards the rows, and hoed freely. The second year they should be budded from the 1st to the 15th of August. The buds should be set very near the ground. In the following April, head them down to the bud, and treat them as recommended for the first year. I have had no knots upon my trees worked upon the wild plum. One grafted with the Washington has been loaded with fruit six years in succession. They make large healthy trees, and will last an age. The worm does not injure the root. When large enough, plant them 12 feet apart in rows. The soil should be rich. Lime or wood ashes is useful, applied near the root. The main roots should be exposed near the trunk when the tree is rooted firmly enough to bear it.

If you want to keep horseradish, grate a quantity while the root is in perfection, put it in bottles, fill the bottles with strong vinegar, and keep it corked tightly. You may thus have a supply all the winter.

Suet and lard keep better in tin than in earthenware.

## THE STEAM CULTIVATOR.

To the Editor of the Canadian Agriculturist:

DEAR SIR,—In that very interesting and unique little book called “Falpa,” or the “Chronicles of a Clay Farm,” a picture is drawn before the reader of an instrument (not rolling on the ground, but) performing independent revolutions behind its locomotive, cutting its way down by surface abrasion into a semicircular trench about a foot and a half wide, throwing back the pulverised soil as it flies from the feet of a dog scratching at a rabbit-hole.

The only approach to this description in a practicable form,—the idea of steam being omitted,—is Samuelson’s digging or forking machine, which is said to bid fair for superseding the plough in many cases.

To supersede the plough is with many considered an impossibility. Though hitherto almost the first object of the farmer’s acquaintance, and the first of his implements of tillage, the numerous attempts made to invent a substitute are plain demonstrations of the inefficient and unsatisfactory working of the instrument.

A machine somewhat similar to that described by the author of “Falpa” is at present being constructed in England. Invented by a Canadian and patronised by the Bureau of Agriculture, it goes before the world with many indications of success. It has already received the approval of Mr. Mechi, on whose farm at Tiptree Hall the first trial is to be witnessed.

The inspection of a model is necessary to a correct idea of the machine. Differing from that portrayed by Mr. Hoskins, its steam power is stationary, or more properly speaking not locomotive, but placed in a cart drawn by horses, and giving motion to a cylinder behind, armed with teeth; or to quote “Falpa,” reminding one at a distant view, of a half-bred between a hay-tedding machine and a Crosskill’s clod-crusher—but unlike them, fundamentally distinct from any and every instrument that was ever seen in a field, as doing its work not by traction, not by its rolling weight, but driven by its axis, as the steam-paddle, the circular saw, the driving wheel of the locomotive, are driven; supported by its own apparatus, and abrading the soil with its armed teeth, first cutting its own trench, burying itself to the required depth, and then commencing its onward task, *tearing down the bank* (so to speak) on the advancing side, cauting back the abraded soil, earth’s *saw dust*, “comminuted, aerated, inverted” into the trench it leaves behind.

This much for Romaine’s Steam Cultivator armed with the Falparian claw, that “works up the earth so fast.”

I am, dear Sir,

Your obed’t servant,

A. KIRKWOOD.

Quebec, Sept. 5th, 1853.

Abundant crops cannot be grown for a succession of years, unless care be taken to provide an equivalent for the substances carried off the land in the products grown thereon.

## THE PLOUGH SUPERSEDED.

The machine described in the following letter, which recently appeared in the London Times, is, we are informed, an invention of Mr. Romaine, formerly foreman in the Queen’s Printer’s Office, Quebec. Mr. Romaine, it appears, is now in England, for the purpose of completing and introducing his machine in the British Islands. We heartily wish him every success:—[Ed. Ag.]

To the Editor of the Times.

SIR,—A calm and rigid investigation and computation have convinced me that the doom of the plough, as an instrument of culture, is sealed, and that the rotatory forking, or, as it is wrongly called, digging machine, is the only profitable cultivator. Even with six or eight horses, it is cheaper and infinitely more effective than the plough.

Since the trial of implements at my “gathering,” I have received from one of our North American colonies the model of a newly-invented machine, which, by a happy and most simple combination of horse and steam power, will—and I pledge my agricultural reputation for it—not only deeply, cheaply, and efficiently cultivate and pulverize the soil, but at the same time sow the seed and leave all in a finished condition. It will also, by a simple inversion, cut and gather the corn without any rake or other complication; while, both in culivation and harvesting, its operation will be continuous and without stoppage.

The inventor and his machine have, by the government of the district (!) been placed under my charge and guidance. I have, therefore, on public grounds, and considering the vast importance of the invention in a national point of view, advised the inventor to grant licenses for its manufacture, at a very moderate royalty to the most eminent agricultural implement-makers in various parts of the kingdom, so that our agriculturists may be secured by competition against monopoly or inferiority, while the inventor will benefit in proportion to the appreciation of his merits. I shall call together a meeting of the various implement-makers, and in due time my practical friends of the old school (who must now consider me quite insane) will have an opportunity on my farm of forming their own conclusions.

I may venture to state generally that the implement when complete will weigh about 20 to 25 cwt., will require a pair of horses, and will represent the power of about 8 to 12, or more, real horses.

I trust I need hardly say that I shall have no pecuniary interest in this matter. The invention has been duly secured. I am, Sir,

Your obedient servant, J. J. MECHE.

Tiptree-hall, Kelvedon, Essex.

The implement for digging will require one man and one boy only, including the management of the steam-engine; in reaping, the same, with the addition of three men to bind as the corn falls into their arms. The men will be carried on the machine.



## ICE HOUSE.

Among the useful and convenient appendages to the farm and country family establishment, is the ice-house. Different from the general opinion which prevailed before ice became so important an article of commerce, and of home consumption, the building which contains it should stand above-ground, instead of below it. And the plainer and more simple it can be constructed, the better.

The position of the ice-house may be that which is most convenient to the dwelling, or to the wants of those who use it. It can be placed beneath the shade of trees, it will so far be relieved from the influence of the sun; but it should be so constructed that sunshine will not affect the ice within it, even if it stand unsheltered; and as it has, by the ice-merchants of our eastern cities, who put up large quantities for exportation abroad and others in the interior, who furnish ice in quantity for home consumption, been proved to be altogether the better plan to build the ice-house entirely above ground, we shall present no other mode of construction than this. Mr. Allen in his recent work on Rural Architecture states that five years' experience with one of our own buildings, has confirmed his opinion of the superiority of this over any other plan which may be adopted.

The design here presented is of the most economical kind, yet sufficiently ornamental to make it an agreeable appendage to any family establishment. The size may be 12 feet square—less than that would be too small for keeping ice well—and from that up to any required extent. The idea here given is simply the *principle* of construction. The posts should be full eight feet high above the ground, to where the plate of the roof is attached, and built thus:

Mark out your ground the size you require for the house; then, commencing at one corner, dig opposite each other, a double set of holes, one foot deep, and two-and-a-half feet apart, on each side of the intended building, say three feet equidistant, so that when the posts stand up they will present a double set, one and a half feet apart. Then set in your posts, which should be of oak, chesnut, or some lasting wood, and pack the earth firmly around them. If the posts are sawed, they may be 4—6 inches in size, set edgewise towards each other. If not sawed, they may be round sticks cut from the woods, or split from the body of a tree, quartered—but sizable, so as to appear decent—and the insides facing each other as they stand up, lined to a surface to receive the planking. Of course, when the posts are set in the ground, they are to show a square form, or skeleton of what the building is to be when completed. When this is done, square off the top of each post to a level, all round; then frame, or spike on to each line of posts a plate, say six inches wide, and four to six inches deep, and stay the two plates together strongly, so as to form a double frame. Now, plank, or board up closely the *inside* of each line of posts, that the space between them shall be a fair surface. Cut out, or leave out a space for a door in the centre of the side where you want it, two and a half or three

feet wide, and six and a half feet high, and board up the inner partition sides of this opening, so as to form a door-casing on each side, that the space between the two lines of posts may be a continuous box all round. Then fill up this space between the posts with moist tan-bark, or saw-dust, well packed from the ground up to the plates; and the body of the house is inclosed, sun-proof, and air-proof, to guard the ice.

Now lay down inside the building, some sticks—not much matter what, so that they be level—and on them lay loose planks or boards, for a floor. Cover this floor with a coating of straw, a foot thick, and it is ready to receive the ice.

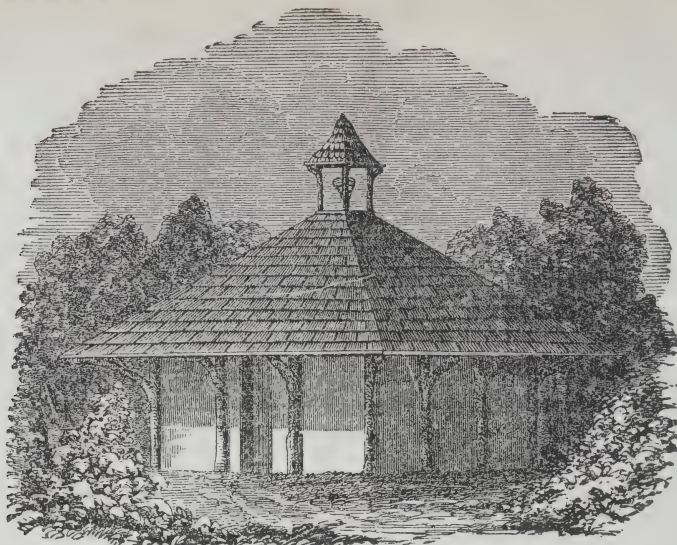
For the roof, take common 3—4 joists, as rafters; or, in place of them, poles from the woods, long enough, in a pitch of full 35° from a horizontal line, to carry the roof at least four feet over the outside of the plates, and secure the rafters well, by pins or spikes, to them. Then board over and shingle it, leaving a small aperture at the top, through which run a small pipe, say eight inches in diameter—a stove-crock will do—for a ventilator. Then set in, 4 little posts, say two feet high—as in the design—throw a little four-sided, pointed cap on the top of these posts, and the roof is done. If you want to ornament the under side of the roof, in a rude way—and we would advise it—take some pieces of 3—4 scantling, such as were used for the roof, if the posts are of sawed stuff—if not, rough limbs of trees from the woods, to match the rough posts of the same kind, and fasten them to the posts and the under side of the roof, by way of brackets as shown in the design.

When the ice is put into the house, a close floor of boards should be laid on joists, which rest on the plates, loosely, so that this floor can be removed when putting in ice, and that covered five or six inches deep with tan, or saw dust—straw will do, if the other cannot be had—and the inside arrangement is complete. Two doors should be attached to the opening, where the ice is put in and taken out; one on the inner side of the lining, and the other on the outer side, both opening out. Tan, saw-dust, or straw should also be placed at the top of the ice, when put in, so as to keep the air from it as much as possible; and as the ice is removed, it will settle down upon it, and still preserve it. Care must be taken to have a drain under the floor of the house, to pass off the water which melts from the ice, as it would, if standing there, injure its keeping.

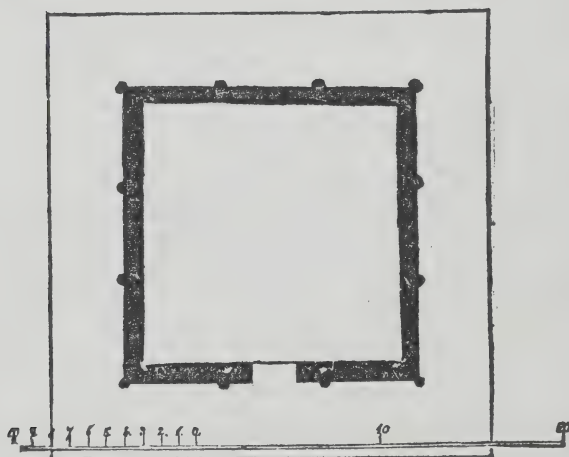
It will be seen, that, by an error in the cut of the ground plan, the inside line of posts does not show, as in the outer line, which they should do; nor is the outside door inserted, as is shown in the elevation. These defects, however, will be rectified by the builder.

We have given considerable thought to this subject, and can devise no shape to the building more appropriate than this, nor one cheaper in construction. It may be built for fifty to a hundred dollars, according to the cost of material and labor, and the degree of finish given to it.

It is hardly worth while to expatiate upon the convenience and economy of an ice-house, to an American. Those who love well-kept meats, fruits, butter, milk, and various etceteras for the



ICE-HOUSE.



GROUND PLAN.

table, understand its utility well; to say nothing of the cooling draughts, in the way of drinks, in hot weather, to which it adds—when not taken extremes—such positive luxury. We commend the ice-house, *well-filled*, most heartily, to every good country housekeeper, as a matter of convenience, economy, and luxury, adding next to nothing to the living expenses, and, as an appendage to the main buildings, an item of little cost, and a considerable degree of ornament.

If an under-ground ice-house be preferred to the plan here shown, a side hill, or bank, with a northerly exposure, is the best location for it; and the manner of building should be mainly like

this, for the body of the house. The roof, however, should be only two-sided, and the door for putting in and taking out the ice may be in the gable, on the ground level. The drainage under the floor, and precautions for keeping the ice should be quite as thorough as we have described, as, otherwise, the earth surrounding it on three sides, at least, of the house, will be a ready conductor of warmth, and melt the ice with great rapidity. If the under-ground plan is adopted, but little more than the roof will show, and of course, be of little ornament in the way of appearance.

TRUTHFULNESS is a corner stone in character, and if it is not firmly laid in youth, there will ever be a weak spot in the foundation.

CHARCOAL, it is said, placed around rose bushes and other flowering plants, has the effect to add greatly to the riches of the flowers.



RURAL ECONOMY.—THORN HEDGES.

To the Editor of the Canadian Agriculturist :

SIR,—Last month I sent a few random thoughts on the "Farmers' Prospects," which I see you have been kind enough to publish, and at the same time I intimated my intention to address you, on some future occasion, on the subject of "Live Fences."

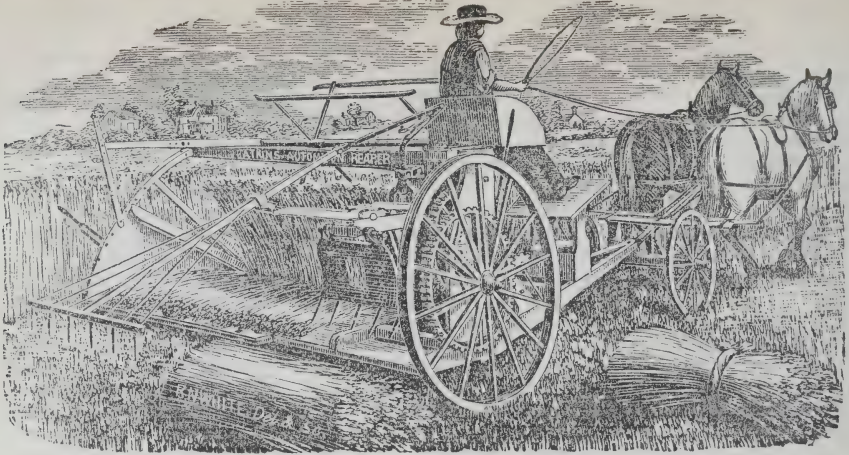
Now, sir, it is evident to every thinking mind that this subject must soon force itself upon the mind of the practical farmer—must soon become one of vital importance—and whether he receive it or no, the stubborn fact stares him in the face, and he cannot get over it. I have often wondered, when looking over the various addresses, discussions, reports, &c., which appear from time to time in the *Agriculturist*, that this question should have been overlooked. The all-absorbing topic of conversation in a new settlement is, "Well, neighbor, how many acres do you intend to clear next season?" "Well, I don't know," replies the other, "I'll underbrush five or six acres this fall, anyhow,—and if the snow doesn't fall too deep, I think, by changing work with some of my neighbors, I will be able to manage it, and if I get a good burn I will have ground enough for all the wheat I want to sow, besides reserving a good potatoe patch; and if I can only get rails enough split to build a good fence to keep out the neighbors cattle, I will have a fine lot of wheat to sell next winter." Just so, sir, at first rate, your plans are well arranged, couldn't be beat, what care you for thorn hedges, or anything else of the kind, so long as you have more rail timber than you can destroy; but hold on, the time is coming when the old woods which have so sullenly retired before the sturdy strokes of your axe must be either replaced by new ones which is not likely, or you must find a substitute for rail timber, which may be rather difficult. And then, again, in old settled townships, where you will not see a stump, perhaps, on a farm, let a few farmers get together, and what are they talking about? About the price of wheat, and whether it is likely to rise or fall. About the number of acres each of them has summer fallowed. About the pedigree and raising of horses. About the superiority of Short-horns, or Herefords, or Ayrshires, over all the other breeds of cattle. About the different breeds of sheep. About the breed of hogs that is easiest to fatten. About the different kinds of manure and its application to different soils. About the kind of ploughs they use, and which does the best work. About making roads, building bridges, draining swamps, &c., and it might be they would even extend their discussion to telegraph lines and railroads, as to whether the former was a paying concern or not, and whether the profits, as well as the advantages and conveniences, of the latter were not more than counterbalanced by the awful sacrifice of human life which we hear of almost every day on this continent.—Thus it is, sir, that farmers generally, in discussing these questions, though laudable, instructive, and each of them highly important in its own place, sometimes overlook those of minor importance, but which, nevertheless, are entitled to their serious consideration.

Now the question arises, What will make the best, the prettiest, the most formidable live-fence? I answer, English Hawthorn, the *Crataegus Oxyacantha* of the naturalist, the baws of which, gathered in October or November, and mixed with sand or dry earth, and frequently turned to separate the seeds from the pulp, are sown in beds in the spring of second year after gathering,—and covered with fine soil about an inch in depth, when strong enough the seedlings are planted into nursery rows—and then about three after they will be ready to be transplanted into the hedgerows. In the part of Britain where I came from, such plants could be bought at the nurseries for 10s. or 15s. per thousand; in this country, I presume they would cost more than double that amount. The young quicks should be transplanted in the fall, not later than October.

Hedges are generally planted on banks having a ditch on one side, and sometimes on both, but (except in the case of forming a fence against a road, or on flat wet land, where ditches are required as drains) it is a great waste of ground to have a ditch at all; and, therefore, it is preferable that the hedge should be planted on the plain surface of the earth. The ground, however, should undergo a thorough preparation by being trenched with the spade, or deeply ploughed, and if a small quantity of barn-yard manure be applied, so much the better. The planting is performed by first trimming the young plants, then by stretching a line along the middle of the prepared ground, and a man with a common garden dibble precedes, making the necessary holes in the soil 5 inches apart, alternately 2 inches on either side of the line, another follows putting the plants into the dibbled and carefully and lightly treading them on every side with the foot, leaving a slight hollow around the plant, to catch the rain, and retain the moisture about the roots. The single ditch may be used when fencing against a road or a distinct property, the ditch should be made on the same side as the road, and the soil having been thrown up from the ditch to form a mound upon which the plants are laid, (following the same rule as in dibbling, of having two lines of plants) about six and ten inches from the side of the bank, the roots being towards the field side, and from where the good soil is thrown upon the roots. But it has been objected, and perhaps justly too, that the young plants are frequently destroyed by mice in winter, this may be partially true, but the chances are in favour of planting—it is indeed a disastrous battle in which all are killed, when not a man is left to tell the melancholy tale. The few plants thus destroyed by vermin can be easily replaced, and in eight or ten years the persevering farmer will have the pleasure of seeing a beautiful hedge row, affording both shade and shelter to his cattle, instead of the unsightly zig-zag rail fence, the very sight of which was enough to entice a marauding ox to make an inroad on his neighbour's grain.

Let this question be thoroughly agitated and acted on, and a few years will show the happy results. In the meantime some of your intelligent readers, may favour you with their experience, on this important subject.

HIBERNICUS.



ATKINS' AUTOMATON REAPER.

The proprietor of this journal, while on a recent visit to New York, devoted some time to a careful examination of newly invented Agricultural implements, especially those on exhibition at the Crystal Palace. Among several recent inventions that may be mentioned with approbation, is the self-raking Reaper, invented by a Mr. Atkins, of Chicago, Illinois. We believe some of these machines have been introduced into the western part of the Province already, but we have not yet heard of their performance in the Canadian harvest field. Perhaps some of our western readers will be able to enlighten us on the subject?

The above is a cut of the Reaper which in its general appearance resembles M'Cormick's but differs from it in several important particulars; the chief of which, is an ingenious contrivance for gathering the grain on the platform into bundles, or gavels, and depositing them at the side of the machine. The objection to this machinery is, of course, its liability to get out of repair. Several wheels and springs are required to produce the peculiar action of the rake, which moves as if in obedience to an *intelligent* motive power, but with even more regularity and steadiness. The additional weight of iron must increase somewhat the draft, but not to any serious amount. The weight, as well as the expense of a *human* raker is dispensed with. The manufacturer, Mr. Wright, of Chicago, told us that he would like to exhibit one at our Provincial Fair, which we urged him to do, and hope our farmers will examine it carefully, should it reach Hamilton in time.

From a large number of certificates, &c., we select the following. We may observe that this Reaper has only been in operation during two harvests. The price is \$160 at Chicago.

"The undersigned having witnessed the working of Atkins' Self-Raking Reaper, manufactured by John S. Wright, of the "Prairie Farmer" Warehouse, Chicago, cheerfully give this testimonial to its entire success. It cut two or three acres of wheat on very rough ground, having a thick under-growth of grass, and delivered it at the side (out of the way of the team as it came round again) regularly in good order for binding. Notwithstanding the grain and under-growth were quite moist from a rain a few hours previous, there was no tendency to clog the knife as in some other machines, and the stubble was left short and even. The raking was better done than it is practicable to do after a cradle, or in raking off other reapers by hand. The machine is strong; not liable to derangement; easily altered to cut high or low; not difficult to manage; thoroughly built; and draft easy for one pair of horses, requiring only one man (the driver) to attend to it. It not only saves the hard labor of raking off by hand as compared with other reapers, but handles the grain so carefully, that a considerable percentage is saved. The movement of the Raking is very curious and novel, and very simple to produce so complicated a movement. We cordially recommend this Reaper to the farmers in this vicinity.

"James S. Negley, Thomas Simpson, J. W. Biddle, William Dilworth, A. Bradley, James Wardrop, Henry Graff, Henry H. Collins, L. R. Livingston, W. P. Baum, H. S. Fleming, D. N. White, L. Wilmarth."

The above is signed by upwards of a dozen respectable farmers, (as we are told,) who witnessed a public trial of the Reaper last season in Pennsylvania. It has taken the 1st prize at the following Fairs:—

"Committee of the Ohio State Agricultural Society, Michigan State Agricultural Society, Kenosha County (Wis.) Agricultural Society, Racine County (Wis.) Agricultural Society, Wisconsin State Agricultural Society, Buel Institute, (Agricultural,) Illinois, Mechanics' Institute, Chicago, Illinois, American Institute, New York City."



The Inventor describes its peculiarities as follows :—

"It saves the labor of one hand, (the raker,) which is the hardest work of the harvest-field.

"The grain is laid so even, that the binding is greatly facilitated, some farmers say that one hand in five, or four, and some even one in three, can be dispensed with as compared with other reapers.

"The careful handling of the grain by the raker, saves a small per cent. over raking by hand.

"The main driving wheel is large, being four feet in diameter, with a four-inch telloe, giving steadiness of movement in passing over rough ground, and good support in soft. The grain wheel, too, is two feet in diameter.

"The frame work is well braced and stiff, supported and strengthened with iron wherever necessary.

"The gearing is compact and symmetrical, well boxed in and protected from dirt.

"The team is relieved of weight and of the side draft by resting the hounds upon a pair of front wheels, making it also very convenient to turn a square corner, as will be learned by a little practice.

"The driver's seat is elevated and easy, giving him good command of his team, while at the same time he can watch the operation of the knife, reel and raker, and if necessary instantly throw the machine out of gear by the lever at his right side.

"The height of cutting is regulated by a very simple arrangement, and the knife may be set close to the ground.

"The draft is comparatively easy for a pair of horses, and is not perceptibly increased by the raker."

## MISCELLANEOUS.

### MISREPRESENTATION OF THE IRISH CHARACTER.

The London *Artisan* has commenced its "Notes on Irish Industry and the Dublin Exhibition," which, from such practical hands, ought to prove highly interesting. In a kindly spirit the writer in his opening chapter desires to disabuse his English readers of the many false and prejudicial notions held as regards Ireland, and urges Irishmen to pursue the path of industry and progress in which they have entered with so much *eclat*. A favorable change of circumstances affords individuals an opportunity of bettering their condition, and raising their character and attainments; as we daily see illustrated on this side the Atlantic. Thousands and tens of thousands of Irishmen are to be found in Canada and the States, who were poor and miserable in their own country, but who are now in a state of comfort, respectability, and not unfre-

quently of positive affluence. We know that numbers of our best and most successful Canadian farmers are natives of the Emerald Isle, who commenced life afresh in this country without a penny, and made their way sheerly from persevering industry and exemplary moral conduct. The *Artisan* says:—

Having some claim to an acquaintance with the people—we mean those classes which will ultimately take that place in Ireland which the middle and operative classes occupy in this country—a knowledge of their habits and tendencies, we have high hopes of the future of Ireland; we look upon the objection which has been seriously urged by many as to the people having "peculiarities incompatible with social and national prosperity," as almost too absurd to be worth the trouble of even an emphatic denial. It is a mistaken notion altogether; engendered through ignorance, and upheld by illiterate prejudice. The very contrary is the fact. On this point it is, perhaps, worth while to quote the words of one whose opinion is of high value, Dr. John Forbes, F.R.S., who has recently made a tour through Ireland:—"I think, I may venture boldly to affirm, that there never was a more injurious opinion entertained respecting a people, than that just stated in relation to the people of Ireland. It is so monstrously absurd—so directly in contradiction, not merely to facts and to experience respecting those very people, but to all that we know of the constitution of man regarded as an animal—that it seems not merely unnecessary, but humiliating, to give it a serious consideration. It is not to be denied that race goes for much in our estimation of social and national progress, any more than that the constitution or temperament of individual men goes for much in modifying their particular career, and determining their *status*. But this is a very different thing from affirming of a whole people, that they are incapable of reaching a given point of elevation in the social scale, which has been attained, not merely by all their neighbors, but even by various branches of their own race within the same quarter of the earth." In reviewing Dr. Forbes' work, the writer in the *Literary Gazette* says:—"The vague assertion of superficial observers, as to a supposed inferiority of race, have been productive of infinite injury to the Irish, particularly in England; and it is only by the resolute expression of opinion among those who occupy a position such as Dr. Forbes holds, that they can be effectively met." Generosity, no less than justice, demands "this resolute opinion" from those who know that the calumny is unfounded—it is the result of a prejudice, which a well constituted mind is too dignified to retain; it is a wrong to be redressed, an injustice to be atoned for. Of the "peculiarities incompatible with social and national prosperity," which are thus so untruly said to distinguish the Irish as a people, the one fact which is most perseveringly dwelt upon in this country is that of "idleness." This, like the other sweeping charge, from which it is inevitably deducible, is the result of gross ignorance of facts, or, what is

worse, of cherished prejudice. When we hear high talk of the "incorrigible idleness," as the cant phrase goes, of the Irish, we are ashamed of the ignorance or illiberality which dictates the charge. Those who know the people, their habits and impulses—and it is they alone who have the right to judge—know well their great capability of endurance, even in the midst of the most disheartening influences, and their spirit of patient unflagging industry, which only requires proper channels for its display, proper motives for its exertions. And on this the question of Irish industry hinges. Without the motive, which every man in this highly favored country has before him, to urge him to exertion, where, we ask, would be the evidences of an industry? It is all very well to point complacently to what we do and what we can do: but let us conceive ourselves as placed under the same depressing influences which have so long acted on the working population of Ireland; let us be made each day, as it drags its weary length along, to feel, in the intensity of its bitterness, that we are slaves in fact, if not in truth; and let the enslaving influence of such a system bear heavily its iron hand on all our social and moral capabilities, not for a year, but for a lifetime—not for a lifetime, but for generations—and what think you would be the condition of our population generations hence? We know of no surer method of dispelling the day dreams of our self-sufficiency, than by trying to impress ourselves with the stern supposition as to what we would have been, had years of temptation and suffering been our lot. It has been truly said, that a one hour's walk amid the busy haunts of men will suffice to dispel the book notions of the study, regarding men and manners; so in like manner, we think, that a day's experience of the work—a day-life of Irishmen placed amidst favorable circumstances, and having a motive for working—would dispel at once the falsehood of the charge so unthinkingly and unfeelingly made against them.

#### HENWIFERY.

The flesh of fowls is a delicacy of the most substantial kind; and that it is within the reach of the middle classes, and occasionally even of the poor, is a matter that we may congratulate ourselves upon; for, from the turkey "braized" and roast goose down to the smaller fry of ducks and chickens, the whole race seem warmly and richly associated with holiday keeping, and with "mirth and jollity," ably supporting the roast beef of Old England, and paving the way for the plum pudding—those pillars of our national hospitality of which we are justly jealous. Notwithstanding our love of beef, it is a notorious fact that few at a dinner party are found to partake of the large joint of beef, the *pièce de résistance*, whilst they can get fowl; and, in an economical point of view, fowl is decidedly preferable to beef, for the weight of bone in the bird, in

proportion to its weight of flesh, is very small indeed, whereas the weight of bone in the beast is a large per-centage upon the weight of its flesh, for nature having adapted the fowl to rapid transit, built its bones very thin, and, instead of filling them with marrow, as in the beast, filled them with air; whilst a beast of burden, like the ox, had to be heavily boned and gristled to resist the strain upon his system; and it must be borne in mind that "he who buys beef buys bones;" it is, therefore, evident that, in the country at least, and in most country towns, fowl is cheaper than flesh, in as far as really digestible food is concerned, there being so much waste with the inferior joints of meat, and few can afford to have the *prime of ox beef*. Animals are all more or less affected in their general health and character by the food they subsist upon, although we cannot always trace from cause to effect, so clearly as we can in butter tasting, of the turnips that the cow had eaten. Dairy-fed pork is the opposite to porker's flesh that had been fed on butcher's offal. Sheep fed on certain pastures are noted for the superiority of the mutton. The flesh of many sea birds tastes so *fishy* as to be scarcely eatable. Carnivorous animals and birds of prey are not eaten at all; and, unless the editors of public journals, and such like influential parties, cry down the practice of feeding chickens upon flesh meat, we shall very soon find the farm-fed fowl a rare bird, for the transition from fresh roast beef, as recommended by the highest authorities now, to raw carrion is so very easy, and so much more economical, that we need not wonder at the improvement being very soon tried and in active work. I should just as soon think of making my dinner off the carcass of a carrion crow as that of a chicken fed on flesh of any kind. It is a common practice with beginners to give parrots a bone to pick, and they seem very handy at it.—Parrots thus fed peck their own feathers at moulting time, and get quite disgraceful in plumage; and precisely the same complaint is now raised against domestic poultry when fed with flesh; they quarrel and peck each other at moulting, and it is only at such a critical period as moulting time that we find the want of proper food.—China fowls always moult badly, so much so that when they have changed their coat once or twice they become *turncoats* indeed, and bear no resemblance to the majestic, happy bird with maiden plumage. Had finely-powdered bone been given to birds instead of flesh, the case would have been very different, for chemical analysis sheweth its fitness, where lime and gelatine are so much needed; but a very little research into the admirable arrangements that Nature has made to reap that which she hath scattered (or as the Bible has it "strawed") will show that these domestic birds are the gleaners after the reapers, and the chances are that that which hath been cast upon the earth will be earthy; so that we see earthen, and even stone, not only admissible into the stomach of the fowl, but actually necessary to be there for its health and well-being. Food containing the same proportion of earth or sand, taken into the stomach of a horse produces frightful agony and death. When fowls assume any other character than gleaners and pickers up of

\* "Turkey boiled  
Is turkey spoiled,  
And turkey roast  
Is turkey lost;  
But for turkey braized  
The Lord be praised."—*Old Cookery Book*.



crumbs, it must be either at the expense of their own health, or of their owner's profits; for, leaving out the "crack feeds" of bread soaked in old ale, fresh roast beef, hempseed, candle-maker's greaves, &c., and taking only the cheapest grain—barley, for example—at present prices, we have one-third of a peck a week for each hen, or four bushels a-year, say 18s., or if wheat, 27s.; and six dozen of eggs a-year, even at a 1s. a dozen, is but a poor set-off against such a sum, and this does not include the cost of keeping the cock bird; and if chickens reared are to be taken into account, so must the food they eat be accounted for also.—*David Sangster.*

## Poetry.

The following lines, written on occasion of the recent death of a young lady, only 15 years of age, (a niece of the Editor of this Journal) have been sent us by a friend residing in the south of England, who is a constant reader of our paper. The spirit which they breathe will commend itself to many a bereaved and sympathising heart:—

'Tis past! thy pains are ended,  
All suff'ring now is o'er;  
Thy spirit, freed, has landed,  
On a far happier shore.

Long did the Angel tarry  
Before he struck the blow,  
And sent disease to carry  
The summons hence to go.

For weary hours you waited,  
And calmly bore the pain;  
By Hope—kind Hope—supported,  
No murmur accents came.

I watched thee when thy sister  
Would try to ease thy pain:  
When not thy faintest whisper  
Was ever breathed in vain.

Her kindness thou wilt treasure  
In that sinless home of thine,  
And feel an Angel's pleasure,  
To tell to ear's divine.

How bitter is the sorrow  
Thy parents too will feel,  
As each returning morrow  
They miss thee at their meal!

When, with agonising sadness,  
The memory of the Past,  
Sweeps o'er them in its madness  
Like a bitter winter's blast.

Oh! if thy spirit wander  
Back to this earth again,  
Thou'lt know the broken slumber—  
The silent heartfelt pain.

The tears that flow unnoticed,  
(The holiest that fall)  
The prayers that are presented  
Unto the Father of us all;

The thoughts thy image wakens,  
Of the vacancy and gloom,—  
The spirit-speaking tokens  
Of Love beyond the tomb;

The still pent-up emotion  
Reliev'd not by a tear;  
The earnest calm devotion,  
Too pure for mortal ear;

This—hid from finite vision—  
Thy heaven-taught soul may know,  
And breathe in soft compassion  
O'er those you lov'd below!

Then bend still o'er them hourly,  
While here on earth they stay:  
And guide them all securely  
In the true and living way.

## GARDEN VISITORS.

It was only last summer that a friend from the city, affecting for the moment a taste for horticulture sought admission to our little garden. We took him thither, and he rushed through as if a railway whistle had pierced the tympanum of his ear, or if he had been bent on "proving by his heels the prowess of his head." We waited at the door until his return, and had not long to wait, when taking the adjoining border as our text, we proceeded to descant upon its inhabitants. The first was a Peruvian novelty, which had never flowered beneath the Tay, and for whose inflorescence we were waiting in high expectancy.—The second was a hybrid Veronica, the gift of an early cherished friend, and most accomplished floriculturist—a child from a marriage of his own making; for our friend's is highly potential in commanding parties to join hands—in manipulating those quaint clandestine marriages, for which nature does not provide—in tying those mystic hymenial knots among Flora's children, the progeny whereof does oftentimes give a pleasant surprise at once to the parent and priest.—The third was a rose—the Geant de Batailles—a gift from another friend, who varies his exertion in the gloomy province of criminal law by frequent recreations among the innocent and lovely denizens of his exquisite Rosarium. We were making slow progress in our descriptive narrative—for, indeed to us a flower border is not a mere border of flowers, but an unrolled volume of many-colored history. Each plant has its pedigree and its parentage—its peculiarities of habit and education, and its biography. One brings to our recollection dear friends in a distant land; another transports us to its native home among the snowy Himalayas. Every plant forms a nucleus of kindly associations, and "on every bough we have learned to hang gentle thoughts and pleasant memories." To number three in the border we had only reached, when, accidentally looking into the face of our friend from the city, we saw depicted there blank ignorance, and a cold negation of all sympathy with our floricultural enthusiasm. It was enough; we were throwing words away. We conducted Mr. Urban out of the garden; but not before he had cropped, with most rash and profane fingers, the flowers of an antirrhinum of such clean and brilliant stripes, that we had severed it from its compeers for the purpose of seeding! Smothering our indignation we led the gentleman back to our parlor, and put into his hands an Edinburgh newspaper! We have made up our mind on the subject. A man that can walk rapidly through a garden is an undoubted barbarian. He ought to keep to the highway—or the boards of the Parliament House; or if he must enter a garden, let it be a large one, where he may take an airing, and pedestrianize at his pleasure.—*Blackwood's Magazine.*

AN APPLE PUDDING DUMPLING.—Put into a nice paste, quartered apples, tie up in a floured cloth, and boil two hours; serve with sweet sauce. Pears, plums, peaches, &c., are fine done this way.

## EDITOR'S NOTICES.

THE AGRICULTURAL SOCIETY OF DERBY.

Will hold its first Exhibition, on the 21st of October next.

THOMAS GORDON, *Secretary.*

"THE OLD COUNTRYMAN."

The first number of a new weekly Journal, under the above title, is announced to be published at the beginning of the present month. The prominent characteristic of this paper, is to consist in the giving of copious details of the news of the United Kingdom and its freedom from party politics. Several advertising sheets have been published, containing letters on the present condition and capabilities of Canada, exceedingly well written, and calculated to make a favourable impression in the Mother Country, as regards this Colony. The paper will be published in Toronto, corner of Church and Front Streets, at fifteen shillings per annum.

## ADVERTISEMENTS.

ANDRE LEROY,  
NURSERYMAN, ANGIERS,  
FRANCE,

HONORARY AND CORRESPONDING MEMBER, &c., of all the principal Agricultural Societies of Europe and America, begs to inform his friends and the Public in general that he has just published his catalogue for 1853, which is the most complete one ever made. All the prices and required information for the importation of all kinds of Trees, Shrubs, Evergreens, Stocks, Roses, &c., &c., will be found in said Catalogue, which can be had free of charge on application to the undersigned, who will receive and forward all orders and attend to receiving and forwarding of the trees ordered, on arrival here. It is useless to add that Mr. LEROY possesses the largest NURSERY on the Continent. His experience in putting up orders for America, and the superior and reliable quality of all his trees, &c., is too well established, to require any further notice. Orders should in all cases be sent to the undersigned in the fall with information when the trees are to be forwarded.

E. BOSSANGE,  
138 Pearl-st., New York.  
3m.

September, 1853.

## BUREAU OF AGRICULTURE,

QUEBEC, 30th September, 1853.

HIS EXCELLENCY THE ADMINISTRATOR OF THE GOVERNMENT has been pleased to *revoke* the appointment, notified in the *Official Gazette* of the 28th of May, last, of

Messrs. Whitman & Wheelock,

OF NO. 100 FRONT STREET, NEW YORK,

As Agents for the receipt and bonding of Goods, or for the Payment of Duties on all such Goods as may be sent from Canada for the INDUSTRIAL EXHIBITION AT NEW YORK, their services not being required.

Mr. ANTROBUS HOLWELL, Esq., Commissioner for Canada at the INDUSTRIAL EXHIBITION at New York, will take charge of all articles sent to the Exhibition from Canada.

## WANTED,

A FEW DECEMBER Nos. of the "AGRICULTURIST" for 1852. Subscribers who can spare any of the above Nos. will be paid by sending them to this Office.

IMPORTANT TO  
BREEDERS OF STOCK.

THE Subscriber offers for sale Two Thorough Bred Short Horn DURHAM BULL CALVES, one 20 months old, a beautiful Roan Colour, splendid proportions, a descendant of the much celebrated "Belted Will" of England—the other about two months old, white, of unequalled Symmetry and beauty, and is a descendant of "Belted Will," his Dam was got by "Bellville," the Champion of England, Scotland and Ireland, and was imported to this Province in 1851, and the first of Mr. Hopper's, celebrated herd, ever brought into Canada.

ALSO:

Two other Calves of the same unequalled breeding 3 weeks old.

Satisfactory certificates of pedigree will be furnished. For further particulars application may be made to

RALPH WADE, SEN.

Spring Cottage, near Port Hope, Canada West.

June, 22nd 1853.

3-m.

## Paige's Thrashing Machines.

FARMERS who desire to obtain a first rate Machine, which, with *less than half* the number of horses, and *half* the number of hands will thrash as much grain in a week, as one of the cumbersome eight horse-powers, should supply themselves with Paige's celebrated machine. Terms easy. For sale at the Office of the *Agriculturist*, Toronto.

August 3, 1853.

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## The Canadian Agriculturist,

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, to whom all communications are to be addressed, is published on the First of each month by the Proprietor, William McDougall at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

## TERMS.

SINGLE COPIES—One Dollar per annum.

CLUBS, or Members of Agricultural Societies ordering 25 copies or upwards—Half a Dollar each Copy.

Subscriptions always in advance, and none taken but from the commencement of each year. The vols. for 1849-'50-'51, at 5s. each, bound.

N. B.—No advertisements inserted except those having an especial reference to agriculture. Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.



THE  
CANADIAN AGRICULTURIST,  
AND  
Transactions

OF THE

BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. V.

TORONTO, NOVEMBER, 1853.

NO. 11.

THE PROVINCIAL EXHIBITION.

ANNUAL ADDRESS OF THE PRESIDENT.

LADIES AND GENTLEMEN:—It is with extreme regret that I have recently learned that William Matthie, Esq., our respected President, has, from ill health, been obliged to decline the performance of his duties, as President of the Agricultural Association of Upper Canada, at our Annual Exhibition.

I feel myself at this late hour wholly unprepared to do justice to Mr. Matthie's plans and exertions, in forwarding the best interests of Agriculture in the Province.

It would indeed be an act of injustice not to mention the liberal manner in which he has offered prizes from his own private purse. I highly appreciate his judgment in selecting the articles for which the prizes have been offered. I am confident that had his health enabled him to carry out his own views, it would have been far more satisfactory to himself and advantageous to the public.

The generous donation of His Excellency the Governor General, which was transmitted to Thomas C. Street, Esq., our last excellent President, too late to be introduced into the Premium List of 1852, has been wisely set apart by our Association, to elicit the best mode of draining our land; and I feel positive that its appropriation will meet with the hearty concurrence of the noble donor.

I would here remark, that the thanks of this Association are certainly due to Mr. Street, for his liberal prize offered during the last and present years, for the improvement of our Carriage Horses.

The liberal sums which have from time to time been granted by the Canada Company, for the production of the best Wheat, Hemp and Flax, and recently for Machines for preparing the two last-mentioned productions for market, are such as to entitle them to the best thanks of this Association. The gratuitous distribution of the finest samples of Wheat, one of the staple articles of export of our country, should secure them the thanks of the Province at large.

The wisdom of the Government is certainly apparent in the continuance of their munificent support, both to the Association and the Board of

Agriculture; and it is confidently expected that the establishment of the Bureau of Agriculture will prove of the highest possible advantage to Canada.

Having only recently become connected with this institution, I hope it may not be improper in me, and I consider it only an act of justice to the founders of the Agricultural Association, and the projectors of the Board of Agriculture, to acknowledge, that a debt of gratitude is due to them, for their exertions, the extent of which is little appreciated. I would beg to suggest, that as the funds of the Society are adequate to it, that the early proceedings of the Association be revised; and that its most important transactions, as well as those of the Board and Bureau of Agriculture, be published and widely circulated.

The late Judge Buel, of Albany, who established the *Cultivator*, raised the character of the farmer in the United States from a low and depressed condition, to that of a profession of the highest and most respectable order in society; and this elevation I may also claim for that class in Upper Canada.

In proof of the prosperity of our country, I would beg to refer you to two most admirable lectures, delivered before the Mechanics' Institute of Toronto, in Feb., 1852, by the Rev. Adam Lillie, in which he clearly shows that our progress in an agricultural point of view, and in its increase in population, would bear a favorable comparison with the most thriving of the United States. These lectures, I believe, have passed through several editions, one of which has been brought out at Brockville, to which have been added the statistics of the counties of Leeds and Grenville, reflecting great credit upon the enterprising inhabitants of that section. This edition has been widely circulated in Britain, which must render great service to Canada.

During the Exhibition at Toronto, in September, 1852, some members of the Deputation from the New York State Fair observed, that while their exhibition far exceeded ours, in point of extent, they were pleased generously to admit the superiority of several articles exhibited there; such as draft horses, neat cattle, and swine; while in grains, and garden vegetables, we distanced them entirely: and the same remark was made in reference to the Floral Hall and Ladies' Department.

The introduction of manufactures among us, is a matter of the highest importance; and the increase of our Tariff, ranging from two-and-a-half to thirty per cent. on many manufactured articles, is giving a direct bounty for their establishment within our own borders. Were it not for the high price of labor, incident on the construction of our Railways, the present would be a most favorable period for their general introduction, and such must absolutely be the case the moment our public works are completed.

In 1812, when Great Britain was employed in fighting the battles of Europe, and sustaining the liberties of the world, the United States, feeling themselves injured, declared war against her; but they thought it advisable to conclude a treaty immediately after the peace of Elba. The advantages that may have been gained to the United States by this war, consisted in their establishing a character for their army and navy. But the great benefit they derived was from the establishment of manufactures in their own country, while their National Debt increased from 44 millions of dollars, at the beginning of the war, to one hundred and fifty millions at the close of it. I hope that these remarks may be received in a kindly spirit. My object in making them is to show the elevated position of Canada at this moment; and while producing to a large extent the means of supporting other nations, she possesses the raw material in many instances, which should supply her inhabitants in much which they now import from foreign countries.

By a proper system of inter-colonial trade established by the authority of the Imperial Government, we might supply both breadstuffs and many manufactured articles, to all the Provinces of British North America, and to the British West India Possessions. This could be done by the granting of bounties between them, with which other nations could have no pretext on which to interfere or complain.

From the most recent advices from Europe, it appears evident that the supply of breadstuffs both in England and France, will fall much below an average crop. And instead of Great Britain receiving a part of her usual supply from France, the latter will become dependent on other nations, and both will no doubt import large quantities from the United States and Canada, as well as from the exporting nations of Europe—some of whom it is to be feared may not possess a surplus. In the event of the scarcity of food in Britain, it will be likely to put to a severe test the principles of Free Trade. For there can be no doubt that the agriculturists, deprived as they are, of all protection, are fast turning their energies in other directions, and the manufacturers of England must look abroad among foreign nations for bread to sustain themselves, which, in case of a general war in Europe, they would find it impossible to obtain; and would have to look to America for it. I have lately noticed a statement in a Manchester paper, (I cannot vouch for its correctness) in which the shortness of the crops in Great Britain this year was quoted to amount to more than fifteen millions of quarters of all kinds of grain, which, set down at a moderate price and paid for in bullion, would require more than is at

present contained in the vaults of the Bank of England, which with all the influx of the precious metals from Australia and California has diminished several millions within the past year.

In taking a general view of Canada, it may be compared to a young lion who has made his entrance into life at a most favourable time, and although he has had many hardships to contend with, they have been such as have rendered him more vigorous and capable of exertion, than if nourished in the lap of indolence.

The country is now assuming a position more favourable to emigration from Britain and the North of Europe than any part of North America, the United States not excepted. I feel a thorough conviction that upon a careful enquiry into the subject, the Agricultural population of Canada West, considering the recent settlement of the Country, will bear a favourable comparison with that of any section of America, in religion, morals, intelligence, energy, perseverance and wealth.

From the able manner in which this all important subject has been treated by the different gentlemen who have preceded me in this most honorable situation, and also by the writers of able essays, and Agricultural reports from various societies, and in the different discussions which have taken place in the Farmer's clubs which have been formed, is convincing to my mind that when societies report throughout the Province, and when these useful clubs are formed in every society, then we shall soon be able to say that our Agricultural system has become second to none. At present there are many things in it to amend, but it ill becomes me, without experience, and on being called on unexpectedly, to endeavour to do justice to this most necessary, interesting and important branch of science and human industry. I shall therefore make only a few cursory remarks, and beg that my apology may be received for not going more fully into it.

Our prize list and the splendid exhibition before us, show, that the several committees to whom the management has been entrusted have performed the duty assigned them in a most admirable manner.

I will now make a few observations on the subject of the grain crop for the present year. It is generally considered that the fall wheat, our great staple, is above an average crop. Oats, barley and spring wheat are below the average. Indian corn and peas are a good yield. The drought has injured the late sown crops, as well as the hay. Late potatoes and turnips have in some instances proved nearly a failure.

In reference to cattle, the Durham has been the favourite with our principal farmers, although the Devon is preferred by some, and on poor lands deservedly so.

The Galloway are being imported, and in my opinion are adapted to the climate. The grades from those improved breeds are very much superior to those called the native cattle, particularly those from Durham Bulls, as they are kindly feeders and attain an early maturity.

I would beg to bring under your notice the growth and culture of flax, which has lately been recommended by Professor Wilson, of London, in the lecture which he delivered before the Agri-



cultural Association of the State of New York, and likewise in Montreal. Having had the pleasure of hearing it in the latter city, I make the following remarks on it from memory; that the export trade of linen from Britain amounts to more than Six Millions Sterling, that Great Britain imports more than 125,000 tons beyond her own production, that the article is worth from £50 to £70 a ton—that in his opinion the soil and climate of this country are well calculated for its production—that it is not an exhausting crop—that the ripening of it for seed will injure the quality of the fibre—that it should be sown in the fall instead of the spring—that the seed should be imported from Riga, and sown on well prepared ground, two bushels to the acre. It will produce four thousand pounds to the acre of the raw material before rotting, which will yield more than 15 per cent of flax for exportation, and at the same time 20 bushels of Seed. And by recent improvements in Mechanics it can be rotted in twelve hours by the application of hot water, and will furnish about one seventh of the gross amount of nutritious liquid for fattening cattle. Professor Wilson has kindly presented the Association with a copy of his Lecture on Flax, published by Saxton, of New York, which I hope will soon be published in the *Canadian Agriculturist*.

Notwithstanding, however, these favorable circumstances, we shall always be dependent on foreign markets until we establish manufactures for ourselves, and a home market to a very considerable extent for the production of the soils, when we shall have from our mines, our fisheries, and our manufactures, a large surplus to export, instead of being confined only to the produce of our forests and our fields.

When we look at our relative position on the globe, and consider that British America in point of extent, covers over half of North America, Greenland and Russian America excepted, that the extreme points of territory extend from N. Lat. 42° to the Frozen Ocean and from W. Longitude 53° to 140°. When we consider that we possess within our limits the best land for wheat growing in America, that we have fisheries second to none, both on the sea coasts and our own immense inland seas; that iron, coal, copper, lead, zinc and even gold, are found in greater or less quantities, that our pine timber will be inexhaustible; our canals, now the largest in the world, and when two sections shall be completed, that from the St. Lawrence to Lake Champlain, and that from Lake Huron to Lake Superior around the Sault Ste. Marie, we shall possess an inland water communication that cannot be excelled in the world; and the increase which must arise to our steam communication which has just been established between Montreal, Quebec, and Liverpool, and must also soon be established from Halifax to the western coast of Ireland as the winter communication in connexion with our railroads, which should make her the highway from Great Britain and Continental Europe to the Western States, which by a correct and liberal policy would soon induce the United States, to ask us for reciprocity. These will develop the resources of the country to an extent of which we cannot at present form an adequate idea.

In this splendid section of Canada that now lies before us, there is indeed some competition, but let any stranger from the old world visit this country, and he will soon feel satisfied, that owing to the peculiar advantages which this peninsula enjoys, in being the direct thoroughfare from the Eastern to the Western States, and that even with the competition of the two great lines, the Grand Trunk reaching from Halifax and Portland throughout Lower and Upper Canada across the State of Michigan, thence onward to the Mississippi; and that of the Great Western, which connects by a much shorter route the American lines.

I think there will soon be ample business for both lines, and that even double tracks will be required to do the business of this immense section of the country, and for the preservation of human life.

I hope I may be pardoned for digressing from the subject of Agriculture to that of internal improvements generally.

However much may be said in behalf of every section of the Province, I hope it may not be deemed irrelevant to make some observations in reference to the Ottawa or Northern part of Canada.

It is now many years since the speaker first suggested the propriety of constructing a railroad from Halifax to Montreal, up the Ottawa to Bytown, thence to the north shore of lakes Huron and Superior, onward to the Red River Colony, crossing the Rocky Mountains at what is known to many as the North Pass, and thence extending to the Pacific Ocean through British territory. This subject I have urged upon the notice of the Imperial and Provincial Governments; as well as upon that of several illustrious individuals in Britain. The events which have recently occurred, and have for many years been in a state of progression, must convince every enlightened man of the absolute and immediate necessity of such a connection, to secure to Great Britain a certain and speedy communication between her Eastern and Western Empires; and the route from Halifax by the Ottawa to Lake Superior, would form one half of that grand line, and open up a direct access to the rich mines bordering on the great lakes, at all seasons of the year.

The immense prairies in British America can accommodate millions of emigrants from the British Isles and the continent of Europe, with comfortable homes. This main line of railway through British America, connecting with the Grand Trunk line at the great bridge at Montreal would secure an immense amount of business to that line, and must insure its success in addition to the trade it must command from the country through which it passes.

Our lumber trade, in addition to furnishing us with one of the two great articles of export of this country, is at the same time doing for us to a considerable extent, what the French Fisheries and the small Islands of Miquelon and St. Pierre, situated in the Gulf of the St. Lawrence, are doing for France, and upon which the French Government place an immense value, as furnishing hardy seamen for their navy, as well as fish for their people. The lumber trade can furnish as

many fearless, hardy, enterprising and robust men for the number engaged as any calling or employment whatever.

On the subject of emigration which is most necessary to our prosperity and advancement, I make this remark, that Canada should offer some enterprising person in this country or Europe a large tract of country, on condition of immediate colonization, which might in some degree contribute to the tranquilization of Europe, and be of great benefit to British America if a colony by that means were established between the Red River and the Rocky Mountains, on the plains which lie in that part of the continent.

Our system of Common School education in connection with the Normal and Model Schools will bear a favorable comparison with that of any other country. While our Colleges in connection with their preparatory Institutions, and the Country Grammar Schools can furnish to our youth a classical education of the highest order, they have engrafted upon their system all the more modern improvements of science.

I hope it may not be improper in me to add, that in point of Sunday School attendance, Canada will bear a favorable comparison with any other country. These observations are the result of a careful inquiry.

Our Penitentiary as a complete establishment will vie, I believe, with any on this continent, its order and discipline are such as to command the admiration of all who visit it; and the recent organization of Sunday Schools in both classes of the prison will, I think, do much for the reformation of the convicts.

The system of Agriculture in the hands of the Bureau, Board, and Association, and the different County societies, is progressing as fast as can be reasonably expected.

Our railways have been located and are in process of construction. Our public credit stands in an enviable position, and now to make our prosperity complete. I would recommend that we should offer liberal prizes. 1st. For a manual to consist of from one hundred and fifty, to two hundred pages, to be prepared by a scientific and practical farmer, dividing Canada into four sections, showing the adaptation of each kind of production to its home market, the best manner of preparing the soil, and applying manures; the best time for putting in the seed, and the best time for securing the crop when ripe. Our Canals and Railroads will soon afford facilities to the most remote farmers for sending their produce to foreign market, when not required for home consumption. Professor Buckland would no doubt be well qualified to prepare such a book, but I fear that his other arduous duties entirely preclude him.

2ndly. For the best system of manufactures applicable to Canada, and when approved of, immediately carry it into effect by improving our Tariff, and as our Finances are equal to it, in some instances grant bounties.

3rdly. For the best system of internal improvements. I do not intend by this Canals or Railways, but good country roads, &c.

4thly. For the best modes of emigration to include every degree from the labourer to the far-

mer and mechanic. In this last work, it is certainly the interest of the Agriculturist, the contractor on our public works, and the Canada Company to join. The latter have already done much in favor of emigration, as well as I have before stated, for the advancement of Agriculture.

It would be an act of injustice in me not to notice in behalf of this splendid Exhibition, the exertions of the Sheriff of the United Counties of Wentworth and Halton, the Mayor of the city of Hamilton, the ex-Mayor, who has kindly acted as Secretary to the Local Committee, and the President of the Horticultural Society. The Mechanics' Institute, and the different Bands and Fire Companies have contributed largely to the pleasure of the ladies and gentlemen who have visited the flourishing city of Hamilton at this time.

To the ladies also, who have contributed their fine work to insure the success of the Exhibition, and to those in particular who have been pleased to assume the difficult and delicate task of Judges in certain departments, we are under peculiar obligations, as well as to the ladies and gentlemen of Hamilton generally, for their kindness and hospitality on this occasion.

In conclusion, I would beg to say that I feel a thorough conviction that between Great Britain and the United States, those too great branches of the Anglo-Saxon family, their interests are every day becoming more and more intimately blended, and that all former animosities are fast being buried in oblivion; that the civilization and evangelization of the world rest on them as nations more than on any other; but that with all the advantages which we enjoy, our exertions will be fruitless without the blessing of Almighty God upon them.

CHAS. P. TREADWELL,  
1st, Vice President.

CITY OF HAMILTON,  
7th October, 1853. }

## PROVINCIAL AGRICULTURAL ASSOCIATION

### ANNUAL MEETING.

The annual meeting of the Directors of the Association was held in the Committee room, on the grounds, on Friday morning Oct. 7th. Mr. Sheriff Treadwell, of L'Orignal, the Senior Vice-President, in the chair.

Members present:—E. W. Thompson, Esq., President of the Board of Agriculture; Hon. Adam Fergusson; J. B. Marks and T. C. Street, Esqs., Ex-Presidents of the Association; R. L. Denison, Treasurer; John Harland, Guelph; Messrs. Archibald Petrie, County of Russell; Robert Bell and Wm. Wallace, of Lanark and Renfrew; Baron de Longueuil, Frontenac; J. P. Roblin, Prince Edward; E. Birrell, Ontario; J. P. Wheeler and G. D. Wells, York; Dr. Crouse, Simcoe; Thos. Douglas, Halton; Thos. Davis and Joseph Webster, Wentworth; G. Stanton and Charles Purley, Brant; J. McCre and J. Wright, Wellington; Judge Campbell, Lincoln; John Lemon, Welland; J. B. Askin and T. C. Dixon, Middlesex; Isaac Minor and James Armstrong, Elgin; J. Barwick and F. Wilford, Oxford.



The following communication from the President of the society, William Matthie, Esquire, of Brockville, was laid before the meeting:

Brockville, August 24, 1853.

GEORGE BUCKLAND, Esq.,  
*Professor of Agriculture and Secretary Provincial  
Agricultural Association, Toronto.*

DEAR SIR,—In addressing the Provincial Agricultural Association through you, as Secretary, I am grieved to state that I cannot do so at present without pain—pain both externally and internally. Externally, because for some considerable time, I have been confined almost exclusively to my bed from severe indisposition; and internally, that I should feel it my duty to relinquish the high and honorable office of President of the Provincial Agricultural Association, bestowed upon me at the last annual meeting of the Association; the duties of which office, from the cause I have alluded to, I feel I am unable longer to perform. Believing this—and believing further that no man should hold such an office as a sinecure, I humbly conceive it to be my duty, thus to place my resignation of the office of President of the Association in the hands of the Board, in order that a more able successor may be installed forthwith.

Had there been reasonable hope to believe that I would be blessed with a speedy restoration to health, I might not have troubled the Association with my resignation, but my physician having ordered a long course of sea bathing, I think, in view of the forthcoming annual exhibition, to which I had looked forward with great pleasure, that in acting as I am doing, I am only consulting the interests of the Association—an Association second to none in the Province either as respects its present or future bearing on the prosperity of this my country, in benefitting which the private convenience of its office bearers, should never be allowed to interfere.

In accepting the office I have just resigned, I know you will believe me when I say that personal ambition had far less to do with it than the sincere desire to lend my humble efforts in forwarding the interests of what I conceived to be the most important branch of productive industry I am sorry to think, notwithstanding its value, too many in Canada seem to slight. In saying this, I do not by any means wish to throw odium on the other productive branches of industry carried on in the country; neither would I wish it understood that I insinuate anything disparagingly of the learned professions; I only wish to express an opinion in reference to Agriculture, on which, so far at least as Canada is concerned, I think the prosperity of all other arts is based, *and to which*, in the present overstocked condition of several professions, it would be well if the attention of the youth of the country was directed.

To relieve Agriculture from a portion of the obloquy prejudice has thrown around it, was one of my motives for endeavoring to enlist the sympathies of the young farmers of the country in defence of "the dignity of labor." The competing essays on this subject, may perhaps be few in number, but like the traveller's acorn, the future may show how great a little thing may become.

As no real happiness can be obtained without labor, the sooner a proper tone is given to it, the sooner it becomes enveloped in its proper garb, and wreathed with its legitimate dignity—and becomes more of a blessing—and the farmer thus emancipated from the trammels of prejudice, will be enabled to take his stand on a footing of equality with the most favored of his fellow men.

I mean it as no idle compliment when I state, that in my opinion, the future prosperity of Canada depends much on the position of her agricultural population. The agricultural associations of Canada are capable of exercising a vast influence in favor of the farmer. The office-bearers of these associations bear much responsibility. This will be seen when we consider that Agriculture, with many of the new settlers, must of necessity for a time be carried on in a very primitive way. For a season, improved implements of husbandry will be hidden things, while the science of agricultural chemistry can only be heard of from afar. While in this situation, the new settler may almost be said to be in a state of incubation; and just as agricultural associations progress, in the spread of knowledge, so will the new settlers progress, till at length they burst forth into an enlightened existence, surrounding themselves, one by one, with such improved implements and stock as the influence of associations may have placed within their reach. Thus guided and cared for, the primitive implements of new settlers will gradually give place to patent ploughs, improved harrows, reaping machines, &c., while their barn-yards will become filled with well selected stock; and the owners, from being ignorant and unhandy backwoodsmen, will soon become intelligent and well-skilled yeomen.

But it is not altogether in drawing out new settlers from their shells, if I may be allowed the expression, that the work of Agricultural Associations consists in. The fact is too well known, that in many of our old settled districts, the state of agriculture is not at all what it ought to be. The schoolmaster, in many localities, has yet to go abroad and unfold his share of knowledge in relation to stock, crops, manures, drains, composition of soils, &c., &c.; and I trust I will be pardoned when I say, that I think it would be well for the Provincial Association to press on the attention of the Agricultural Department of the Government, the necessity of taking steps to make it imperative for all Common School teachers to know something in reference to Agricultural Chemistry, in order that the youth of Canada may be taught something of a science which is of so much importance in the proper cultivation of the soil in which they have so large a stake.

To you, Sir, and the other officers of the Association, I beg to tender my heartfelt thanks for the many acts of kindness and courtesy which you have all extended towards me; and I trust you will excuse the liberty I have now taken in transmitting these thoughts for your consideration, in bidding you farewell as an officer of the Association. If there is one thing I desire more than another in this world, it is the progress of my country in everything tending to elevate and ennoble her people. That something has been done by the Association in this work, no man can

doubt who has witnessed the exhibitions of last and preceding years; exhibitions which I, as a Canadian, feel proud in alluding to. These exhibitions gave proof of what the soil of Canada is capable of producing, so also did they show the advancement made in every department of skilled labor; both together giving triumphant tokens that Canada is not wanting in heads to plan and hands to execute.

May the Association go on and prosper; and may the Government of the country throw around its efforts for good, the shield of its protection, so that in the end the great aim of the Agricultural Association may be accomplished, viz., the improvement of the farmer, and the advancement of Agriculture in all its branches, in Canada, to the highest state of perfection.

With sincere desires that every blessing may attend you and the other office-bearers of the Association,

I remain, Dear Sir, with much esteem,

Your ob't and oblig'd servant,

WILLIAM MATTHIE.

The reading of the above letter elicited a universal expression of sympathy towards the President, whose term of office it was determined should run its usual length. The Hon. Adam Fergusson, after paying a very high, but equally deserving compliment to the worthy and respected President, concluded by moving the following resolution, which was carried by acclamation:

*Resolved*—That it is with unfeigned regret, the Association of Canada West have received the resignation of their respected President, William Matthie, Esq.

Whilst the Association deeply regret the cause of this event, they desire to record their sincere sympathy, and to express their high obligation to Mr. Matthie, for the anxious and zealous manner in which he has discharged his official duties, and to thank him, in the name of the Agricultural, Commercial, and Manufacturing interests of Canada West, for the liberal, and munificent pecuniary aid which he has bestowed upon their furtherance and advancement. Their patron and friend may rest assured, that his name will be ever cherished, and borne in grateful remembrance, and that the judicious and anxious suggestions, contained in his letter of resignation, will be noted and kept carefully in view.

The Association further desire to convey to Mr. Matthie, an anxious hope that it may please God, ere long, to restore him to health, and enable him to resume the active discharge of his public and private duties.

The Secretary is hereby instructed to forward, at an early day, a certified copy of the above resolution, to Mr. Matthie.\*

The following resolutions were also adopted:  
*Resolved*—That Mr. Sheriff Treadwell, the senior Vice-President, be President for the ensuing year.

*Resolved*—That David Christie, Esq., M. P. P., be 1st Vice-President.

\* We are happy to learn that Mr. Matthie's health is much improved, and heartily wish him a speedy and thorough recovery.—[Ed. Ag.]

*Resolved*—That William Niles, Esq., Warden of the County of Middlesex, be the 2nd Vice-President.

*Resolved*—That the thanks of the Association be given to R. L. Denison, Esq., and that he continue to act as Treasurer for the ensuing year; and that the Bank of Upper Canada continue the Bank of deposit.

Communications were read from the County Council of Middlesex and Elgin, and the Corporation of London, guaranteeing the munificent sum of £1,200, on condition that the next Exhibition be held in the town of London, that is, £500 for the town of London; and £200 from the County of Elgin. It is also proposed to raise a sum of £300 by private contributions. Whereupon it was

*Resolved*—That the next Exhibition be held at London, on Tuesday, September 26th, 1854, and three following days.

*Resolved*,—That the thanks of this Association be given to the Mayor and Corporation of Hamilton, for their liberal contribution to the funds of the Exhibition.

*Resolved*,—That the thanks of the Association be given to W. G. Kerr, Esq., Mayor of Hamilton, Chairman of the Local Committee, Mr. Alderman Ford, Secretary, and to the other gentlemen composing the same, for their zealous and valuable services.

*Resolved*,—That the thanks of the Association be given to the Judges on the present occasion.

*Resolved*,—That the thanks of the Association be communicated to Mr. Commissioner Widder, and the Canada Company, for the continuance of prize of £25 for the best 25 bushels of wheat, and for their liberal premiums for Flax and Hemp.

*Resolved*,—That the thanks of the Association be given to the Warden and Council of the County of Wentworth for a grant of £100, and to the Agricultural Society of the County of Waterloo, for a grant of £25 towards the present Exhibition.

*Resolved*,—That the thanks of the Association be presented to T. C. Street, Esq., M.P.P., for his second liberal Prize for the best Stallion adapted to the wants of this country.

*Resolved*,—That the grateful acknowledgements of this Association be hereby expressed to the Ladies of Hamilton and elsewhere, for their valuable and attractive contributions to the present Exhibition.

*Resolved*,—That the Directors of this Association have much pleasure in recording their best thanks to the Citizens of Hamilton, for the zealous and liberal manner in which they have sustained this Exhibition,—and for the generous hospitality which they have extended to visitors.

*Resolved*,—That the thanks of this Association be given to Sir Allan McNab, W. H. Dixon, Esq., and H. McKinstry, Esq., the Proprietors of the beautiful and extensive grounds, for the present Show.

*Resolved*,—That this Association has much pleasure in recording its grateful acknowledgements to the conductors of the Press, for the valuable aid they have rendered in giving publicity to its objects and proceedings.



*Resolved*.—That Messrs. Thompson, Denison and Buckland be a Committee to examine and revise the By-Laws of this Society.

The Baron de Longueuil offered £10 for the best Hereford Bull, not less than 2 years, and not more than 4 years old, for the next Exhibition.

After a vote of Thanks to the Chairmain, the meeting separated.

## PROVINCIAL EXHIBITION.

### PRIZE LIST.

CORRECTED BY THE SECRETARY.

#### CLASS A.—DURHAMS.

JUDGES.—John Walton Peterboro'; Thos. Stock, E. Canboro'; Solomon Walker, Norfolk; Henry Stone, Port Colborne; D. W. Freeman, Norfolk; James Wright, Guelph.

##### *Best Bull.*

1 A Harvey, Fergus, £7; 2 Baron de Longueuil £4; 3 F Welford, Woodstock £2 10s; 4 John Wade, Cobourg, £1 10s.

##### *Best 3 years old Bull.*

1 Matthew Jones, Darlington, £6; J Jarvis, Trafalgar, £3 10s.

##### *Best 2 years old Bull.*

1 Hon A Fergusson, Flamboro, £4 10s; 2 H. Parsons, Guelph, £3; 3 Charles Tuck, Nelson, £1 15; Ed Jones, Stamford, £1.

##### *Best 1 year old Bull.*

1 Ralph Wade, Port Hope, £3 10; 2 Hon A Fergusson, Flamboro £2 5s; 3 Thos. Hatt, Ancaster, £1 5s; 4 Thos Alton, Nelson, 15s.

##### *Best Bull Calf (under 1 year.)*

1 Ralph Wade, sen, Port Hope, £2 10s; 2 J. P. Wheeler Scarboro', £1 15s; Ralph Wade, sen, Port Hope, £1; 4 do. H. Parsons, Guelph, 10s.

##### *Best Cow.*

Ralph Wade, sen., Port Hope, £5; 2d do J. P. Wheeler, Scarboro, £3; 3 do Ralph Wade, sen., Port Hope, £2; 4 do A. C. Hamilton, St. Catharines, £1.

##### *Best three years old Cow.*

Edward Jones, Stamford £4; 2 do Mr. Parsons, Guelph, £2; 3 do Hon A. Fergusson, Flamboro, £1 10s; 4 do Ralph Wade jr., Port Hope, 15s.

##### *Best two years old Heifer.*

J. Simpson, Darlington, £3; 2 do A C Hamilton, St. Catharines, £2; 3 do Thos. Hatt, Ancaster, £1; 4 do Hon A Fergusson, Flamboro, 15s.

##### *Best one year old Heifer.*

Hon A Fergusson, Flamboro, £2 10; 2 do John Taylor, Stamford, £1 10; 3 do Mr. McMicking, Stamford, £1; 4 do J. Ireland, Nelson, 10s.

##### *Best Heifer Calf under one year.*

Ralph Wade, jr, Cobourg, £1 10s; 2, R Kirkwood, Paris, £1; 3, G Elmslie, Nichol, 10s; 4, Ralph Wade, jr, Cobourg, 5s.

#### CLASS B.—DEVONS.

JUDGES.—Robert Kirkwood, Paris; John Wade, Port Hope; John Robins, Norfolk.

##### *Best Bull.*

W H Lock, Yarmouth, £7; 2, J M Minto, Cobourg, £4; 3, Nathan Cheat, Port Hope, £2 10s.

##### *Best 2 year old Bull.*

Daniel Tye, Waterloo £4 10s.

##### *Best one year old Bull.*

Robert Ferrie, Doon, £3 10s; 2, do do, £2 5s; 3, G Black, Hamilton, £1 5s.

##### *Best Bull Calf under one year.*

W H Lock, Yarmouth, £2 10s; 2, J Masson, Cobourg, £1 15s; 3; W H Lock, Yarmouth, £1.

##### *Best Cow.*

W H Lock, Yarmouth, £5; 2, do do do, £3; 3 J S Castor, Cobourg, £2.

##### *Best two year old Heifer.*

W H Lock, Yarmouth, £3; 2, do do do, £2; 3, J P Gage, Wellington Square, £1.

##### *Best one year old Heifer.*

W H Lock, Yarmouth, £2 10s; 2, do do do, £1 10s; 3, Daniel Tye, Wilmot, £1.

##### *Best Heifer Calf under one year.*

W H Lock, Yarmouth, £1 10s; 2, J M Masson, Cobourg, £1; 3, Daniel Tye, Wilmot, 10s.

#### CLASS C.—HEREFORDS.

JUDGES.—Same as for Avyrschires.

##### *Best Bull.*

Joseph Piers, Oxford, for Oxford Co. Agricultural Society, £7.

##### *Best two year old Bull.*

Baron de Longueuil, Kingston, £4 10s.

##### *Best Bull Calf under one year.*

Baron de Longueuil, Kingston, £2 10s.

##### *Best Cow.*

Baron de Longueuil, Kingston, £5; 2, do do do, £3

##### DISCRETIONARY PRIZE.

##### *Highland Bull.*

William A Baldwin, Park Farm, Toronto, £2 10s.

#### CLASS D.—AYRSHIRES.

JUDGES.—Peter Ruttan, Prince Edward; T D Farley, Hastings; Robert Cotton, Credit.

##### *Bull.*

1, J B Ewart, Dundas, £7; 2, J Patterson, Streetsville, £4; 3, Francis Marriott, Guelph, £2 10s.

##### *Two years old Bull.*

1, W Miller, West Flamboro', £4 10s; 2, R L Denison, Toronto, £3.

##### *One year old Bull.*

1, P R Wright, Cobourg, £3 10s; 3, W Miller, W Flamboro', £1 5s.

##### *Bull Calf under one year.*

1, J B Ewart, Dundas, £2 10s; 2, do do do, £1 15s.

##### *Cow.*

1, J B Ewart, Dundas, £5; 2, R L Denison, Toronto, £3; 3, do do do, £2.

##### *Two years old Heifer.*

1, J B Ewart, Dundas, £3; 2, Baron de Longueuil, Kingston, £2; 3, Thomas Robson, Dundas, £1.

##### *One year old Heifer.*

1, J B Ewart, Dundas, £2; 2, J Webster, West Flamboro', £1 10s.

#### CLASS E. 1.—GRADE CATTLE.

JUDGES.—John Jarvis, Trafalgar; Thomas Belt, Peterboro'; George Weston, Guelph.

##### *Best Cow.*

1 J S McCollum, Nelson, £5; 2 Thomas McClure, Nelson, £3; 3 Thomas Hodgskin, Guelph, £2

##### *Three years old Cow.*

1 Thomas Hodgskin, Guelph, £4, 2 C Tuck Nelson, £2 10s; 3 Wm Whitlaw, Guelph, £1 10s.,

*Two years old Heifer.*

1 John S McCollum, Nelson, £3; 2 J Baker, Barton, £2; 3 John S McCollum, Nelson, £1.

*One year old Heifer.*

1 Thomas Hodgskin, Guelph, £2 10s; 2 John S McCollum, Nelson, £1 10s; 3 W McMicking, Stamford, £1.

*Heifer Calf, under 1 year old.*

1 W Whitlaw, Guelph, £1 10s; 2 Charles Tuck, Nelson, £1; 3 do do do, 10s.

**CLASS E. 2.—FAT CATTLE, ANY BREED.**

JUDGES—John Cockburn, Puslinch; Jonathan Scott, Toronto; Charles Bain, Green River.

*Ox or Steer.*

1 John Gould, Scarboro', £6; 2 L Duff, Abbotsford, £4; 3 Isaac Armstrong, Dundas, £2.

*Cow or Heifer.*

1 Robert Wickett, Seneca, £6; 2 Thomas Stock, East Flamboro', £4.

*Yoke of Working Oxen.*

1 D Ch'at, Glanford, £3; 2 Joseph Carpenter, Saltfleet, £2; 3 P Gage, Saltfleet, £1; 4 Thos. Hodgskin, Guelph, £1.

**CLASS F.—HORSES.**

MR. STREET'S PRIZE FOR A STALLION.

R Robson, London, £20 The Judges for this prize were a combination of the separate committees on horses.

**BLOOD HORSES.**

JUDGES—Richard Jackson, Guelph; George Stanton, St. George; Oliver Blake, Norfolk.

*Thorough-Bred Stallion.*

1 George Cooper, York, £7 10s; 2 H Huntingford, Woodstock, £5; 3 S R Wright, Markham, £2 10s.

*Thorough-Bred 3 years old Stallion.*

1 G J Grange, Guelph, £5; 2 Jonathan Davies, jr., Saltfleet, £3; 3 D McLean, Toronto, £1.

*Thorough-Bred 3 years old Filly.*

1 H Foster, Clarke, £4.

*Thorough-Bred Mare and Foal.*

1 J & J White, Trafalgar, £5; 2 G J Grange, Guelph, £3; 3 A C Hamilton, St. Catharines, £1.

*Blood Colt, 2 years.*

1 J & J White, Trafalgar, £2.

*Blood Filly, 1 year.*

1 J & J White, Trafalgar, £1.

**CLASS G.—AGRICULTURAL HORSES.**

JUDGES—Jos. Smith, Scarboro'; D. Jones, Hastings; John Masson, Cobourg.

*Stallion for Agricultural purposes.*

1 J Smith, Glanford, £7 10s; 2 Isaac Modeland, Chinguacousy, £5; R Swallow, Rainham, £2 10s.

*Heavy Draught Stallion.*

1 James Bell, E. Cobicoke, £7 10s; 2 John Wilson, Whitby, £5; 3 D Rowntree, York, £2 10s.

*Three years old Stallion.*

1 A Johnstone, Burford, £5; 2 S Shunk, Vaughan, £3; 2 D Perley, Brantford, £1.

*Two years old Stallion.*

1 Joseph Freeman, Wellington Square, £3; 2 W. Waddell, Pickering, £2; 3 Joseph Helliwell, Toronto, £1.

*Three years old Filly.*

1 C Tuck, Nelson, £4; 2 R Ibson, Toronto, £2 10; 3 H Cornwell, Brantford, £1.

*Two years old Filly.*

1 George Miller, Markham, £3; 2 L Salmon, Binbrook, £2; 3 Amos Chambers, Saltfleet, £1.

*Span Matched Carriage Horses.*

1 W H Dickson, Niagara, £4; 2 T C Macklem, Chippawa, £3; 3 L Smith, Barton, £1.

*Span Draught Horses.*

1 J Simpson, Darlington, £4; 2 N Merritt, Barton, £3; 3 G Jones, Charlotteville, £1.

*Brood Mare and Foal, or evidence that the Foal has been lost.*

1 (Entry No 14, name omitted in book) £5; 2 Jacob McMichael, Norfolk, £3; 3 A McMichael, Townsend, £1.

*Saddle Horse.*

1 W Robinson, Trafalgar, £2; 2 W Applegarth, Flamboro' East, £1 10; 3 Stephen Farr, £1.

## DISCRETIONARY PRIZES.

*Poney.*

1 A S Kennedy, Hamilton, £1 10.

*Hack Horse.*

1 J O Hatt, 10s.

**CLASS H.—SHEEP.**

## LEICESTERS.

JUDGES—J P. Wheeler, Scarboro, Wm. Beattie, Westminster, Wm. Dixon, Beverley.

*Best Ram, two Shears and over.*

1 Geo. Miller, Markham, £4; 2 Wm. Miller, Pickering, £2; 3 Ralph Wade, junr., Cobourg, £1.

*Shearling Ram.*

1 Thomas Vickers, Clarke, £2 10s; 3 George Miller, Markham, £1 10s; 3 J P Gage, Wellington Square, 15s.

*Ram Lamb.*

1 Geo Miller, Markham, £2; 2 R B Ireland, Nelson, £1; 3 Francis Johnson, Toronto, 10s.

*Two Ewes, 2 shears and over.*

1 J Dixon, Clarke, £4; 2 William Miller, Pickering, £3; 3 do do do, £1 10s.

*Two Shearling Ewes.*

1, J Simpson, Darlington, £3; 2, James Dixon, Clarke, £2; 3, William Miller, Pickering, £1.

*Two Ewe Lambs.*

1, George Miller, Markham, £1 10; 2, J. Ireland, Nelson, £1; 3, N Cooper, Toronto, 10s.

## SOUTHDOWNS.

JUDGES.—Ralph Wade, Cobourg, Daniel Campbell, Glengarry, Wm. Button, Markham.

*Best Ram, two shears and over.*

1, W H Ball, Thorold, £4; 2, J Dickson, Stamford, £2; 3, Edward Jones, Stamford, £1.

*Shearling Ram.*

1, Edward Jones, Stamford, £2 10s; 2, E W Thomson, York, £1; 3, A Burrows, Brantford, 15s.

*Ram Lamb.*

1 E W Thomson, York, £2; 2 W H Ball, Stamford, £1; 3 W S Seele, Humberstone, 10s.

*Two Ewes, 2 shears and over.*

1 Edward Jones, Stamford, £4; 2 E W Thomson, York, £3; 3 W Ash, Thorold, £1.



*Two Shearling Ewes.*

1 T Spencer, Whitby, £3; 2 Edward Jones, Stamford, £2; 3, do do do, £1.

*Two Ewe Lambs.*

1 E W Thomson, York, £1 10s; 2 Edward Jones, Stamford, £1; 3 do do do 10s.

PRESIDENT'S PRIZE.

*Best Southdown Ram two shears.*

1 T Spencer, Whitby, £4.

MERINOS AND SAXONS.

JUDGES.—Same as for Southdowns.

*Best Ram, 2 shears and over.*

1 Nathan Choate, Hope, £4; 2 do do do £2; 3 J Crosby, Markham, £1.

*Shearling Ram.*

1 John Langstaff, Richmond Hill, £2 10; 2 J Crosby, Markham, £1 10s; 3 N Choate, Port Hope, 15s.

*Ram Lamb.*

1 Nathan Choate, Hope, £2; 2 J Rymal, Barton, £1; 3 John Langstaff, Richmond Hill, 10s.

*Two Ewes, two shears and over.*

1 N Choate, Hope, £4; 2 J Crosby, Markham, £3; 2 John Langstaff, Richmond Hill, £1 10s.

*Two Shearling Ewes.*

1 N Choate, Hope, £3; 2 do do do £2; 3 J Crosby, Markham, £1.

*Two Ewe Lambs.*

1 N Choate, Hope, £1 10s; 2 J Crosby, Markham, £1; 3 N Choate, Hope, 10s.

FAT SHEEP.

JUDGES.—John Boyes Amherst Island, Thomas Locher, Matahide, Levi Fowler, Fingal, James Daniel, London.

*Best 2 Fat Wethers.*

1 Joseph Pierson, Whitby, £3; 2 John Gould, Scarborough, £2; 3 W J Heyton, London, £1.

*Two Fat Ewes.*

1 George Miller, Markham, £3; 2 Nathaniel Cooper, Toronto, £2; 3 George Miller, Markham, £1.

CLASS I.—PIGS.

JUDGES.—George Wilson, Guelph, James Patterson, Streetsville, Wm. Mason, Scarborough, William Wallace, Lanark, Wm. Thompson, Brantford, Edward Harland, Guelph.

LARGE BREED.

*Best Boar, one year and over.*

1 William Gage, Barton, £3; 2 Alexander Thompson, East Flamboro', £2; 3 R Coates, Oakville, £1.

*Breeding Sow, one year and over.*

1 Vickers Peart, Nelson, £3; 2 John Long, East Flamboro' £2; 3 J P Wheeler, Scarboro', £1.

*Best Boar of 1853.*

1 W Whitlaw, Guelph, £2; 2 C A Jordison, Port Hope, £1 10; 3 John Long, East Flamboro', £1; 4 (Discretionary) D Smith, Trafalgar, 15s.

*Best Sow of 1853.*

1 W Whitlaw, Guelph, £2; 2 C A Jordison, Port Hope, £1 10s; 2 A Coates, Oakville, £1; 4 (Discretionary) D Smith, Trafalgar, £1.

PRESIDENT'S PRIZE.

*Best Boar, 1 year and over.*

1 A Thompson East Flamboro', £3.

SMALL BREED.

*Best Boar, one year and over.*

Thomas Drury, Barrie, £3; 2, J. Allen, West Flamboro', £2; 3, Thomas Drury, Barrie, £1.

*Best Boar, one year and over.*

Thos. Drury, Barrie, £1; 2, J. Allen, West Flamboro' £2; Thos. Drury, Barrie, £1.

*Best Breeding Sow, one year and over.*

James Wetenhall, Glanford, £3; 2, P. R. Wright, Cobourg, £2; 3, Jas Covernton, Charlotteville, £1.

*Boar of 1853.*

P R Wright, Cobourg, £2; 2, J. P. Wheeler, Scarboro, £1 10s; 3, William Miller, Pickering £1.

*Sow of 1853.*

J.P. Wheeler, Scarboro £2; 2 D. Smith, Trafalgar, £1 10s; A. Thompson, East Flamboro, £1.

*Discretionary Prizes in Pigs.*

Mr Parsons, Guelph, Chinese Pigs. £1 10s

CLASS J.—POULTRY.

JUDGES.—Col. Saunders, Guelph, Wm Benson, Port Maitland, Samuel Harris, Brantford.

*Best pair Dorkings.*

George Miller, Markham, 10s; 2, R Kneeshaw, Hamilton, 5s.

*Best pair Cochins China, Malay or Chitgeong Fowls.*

Sheriff Thomas, Hamilton, 10s; 2, W A Fergusson, Stamford, 5s.

*Best pair Bantams.*

Thomas Lottridge, Barton, 10s; 2, C L Helliwell, Flamboro, 5s.

*Best pair of Common Ducks.*

George Miller, Markham, 10s; 2, do do do, 5s.

*Best collection of Pigeons.*

H W Routh, Hamilton 10s.

*Best lot of Poultry, owned by Exhibitor.*

Sheriff Thomas, Hamilton, £1.

DISCRETIONARY PRIZES IN POULTRY.

*Cochin China Chickens.*

Robert Wells, Toronto. 10s.

*Shanghai Fowl and Eggs.*

Godfrey McDonald, Grimsby, 5s.

*Pea Fowls.*

H P Wilson, Caistor, 10s.

CLASS K.—AGRICULTURAL PRODUCTIONS

JUDGES.—James Fleming, Toronto; Charles Perley, Burford; Thos. Davis, Saltfleet; Edwd. Wheeler, Markham; John McCrae, Guelph; John Watson, Port Maitland; Jacob Snyder, York.

*Canada Company's Prize of £25.*

For the best 25 bushels of Fall Wheat, the produce of Canada West, the growth of the year 1853. The prize awarded to the actual grower only of the wheat, which is given up to the Association, for distribution to the County Societies for seed. A Griffin, Water, down, Flamboro, £25; 2 (by the Association) Clarkson Freeman, West Flamboro, £10; 3, R Turnbull, South Dumfries, £5.

Winners of the 2nd and 3rd premiums retain the wheat.

*Best 2 bushels of Winter Wheat.*

James Freeman, West Flamboro £2 10s; 2, Israel Allen, West Flamboro, £1. 15s; 3, Isaac Anderson, West Flamboro, £1 5s.

*Best 2 bushels of Spring Wheat.*

J Armsstrong, Eramosa, £2; 2, W F Weiss Ameliasburgh, P E, £1 15s; 3, Wm Forfar, Scarboro, £1 5s.

*Best 2 bushels of Barley.*

Lewis Mills, West Flamboro £1 10s; 2, P R Wright, Cobourg, £1; 3, J Wood, Eramosa, 10s.

**Best 2 bushels of Rye.**

James Lafferty, £1 10s; 2. Isaac Anderson, West Flamboro, £1; 3, do do do, 10s

**Best 2 bushels of Oats.**

J P Wheeler, Scarboro, £1 10s; 2, J Patton, Scarboro, £1; 3, D Gampbell, Glengarry, 10s.

**Best 2 bushels of Peas.**

W F Weiss, Ameliasburgh, P E, £1 10s; 2, Manuel Freeman, Blenheim £1; 3, B Johnston, Etobicoke, 10s

**Best 2 bushels of Marrowfat Peas.**

J S Armstrong, Eramosa, £1 10s; 2, Wm Whitlaw, Guelph, £1; 3, L Parkinson, Eramosa, 10s.

**Best 2 bushels of Indian Corn, in ear.**

John R Pettit, Grimsby, £1 10s; 2, Wm Freeman, Saltfleet, £1; 3, Joseph Fierman, do, 10s.

**Best bushel of Timothy seed.**

William Gage, Lake Shore, £1 5s; 2, D K Choat, Glanford, 15s; 3, Wm Tolton, Eramosa, 10s.

**Best 2 bushels of Clover Seed.**

J & J White, Trafalgar, £2; 2, do do do, £1 10s; 3, Jacob Blain, Ancaster, £1.

**Best bushel Hemp Seed.**

Alexander Shaw, Toronto, £1; 2, do do do, 15s.

**Best bushel of Flax Seed.**

L Parkinson, Eramosa, £1 10s; J S Armstrong, Eramosa, £1; 3, Alexander Shaw, Toronto, 10s.

**Best Swedish Turnip Seed, from transplanted bulbs, not less than 20lbs.**

J Wood, Eramosa, £1 10s; 2, James Spence; Beverly, £1. 3, David Fisher, Bowmanville, 10s.

**Best bale of Hops, not less than 112lbs.**

John Ritson, Oshawa, £2 10s; 2, J W Belton, London, £1 10s; 3, David Fitch, Stamford, £1.

**Bushel Potatoes.**

1 Benjamin Johnston, Etobicoke, 15s; 2 Stephen Wild, Barton, 10s; 3 George Snooks, Saltfleet 5s.

**Bushel Swedes Turnips.**

1 I Parkinson, Eramosa, 15s; 2 John Cockburn, Puslinch, 10s; 3 Wm Olds, Woodhouse.

**Bushel White Globe Turnips.**

1 George Morton, Guelph, 15s; 2 John Gray, Toronto, 10s; 3 Wm Baker, Oakville, 5s.

**Bushel Aberdeen Yellow Turnips.**

1 Philip Spaun, Ancaster, 15s; 2 John Gray, Toronto, 10s; 3 Wm Baker, Oakville, 5s.

**Bushel Red Carrots.**

1 Baron de Longueuil, Kingston, 15s; 2 E Hubbard, Guelph, 10s; 3 W Benham, Guelph, 5s.

**Bushel White or Belgian Carrots.**

1 Baron de Longueuil, Kingston, 15s; 2 J Sisley, Scarboro', 10s; 3 A W Olds, Woodhouse, 5s.

**Bushel Mangel Wurzel, (Long Red.)**

1 Baron de Longueuil, Kings on, 15s; 2 J Sisley, Scarboro', 10s; 3 Wm Hoining, East Flamboro', 5s.

**Bushel Yellow Globe Mangel Wurzel.**

1 James Sutherland, Cobourg, 15s; 2 Baron de Longueuil, Kingston, 10s; 3 Alex Shaw, Toronto, 5s.

**Twelve Roots of Khol Rabi.**

1 A A Baker, Guelph, 10s; 2 D Falconer, Toronto, 5s.

**Bushel of Sugar Beet.**

1 Alex Shaw, Toronto, 15s; 2 Baron de Longueuil, Kingston, 10s; A A Baker, Guelph, 5s.

**Bushel of Parsnips.**

1 Baron de Longueuil, Kingston, 15s; 2 A A Baker, Guelph, 10s; 3 James Oford, Toronto, 5s.

**Four large Squashes for Cattle.**

1 G Gordon, Toronto, 15s; 2 Alex Shaw, Toronto, 10s; 3 Baron de Longueuil, Kingston, 5s.

**20 lbs. of Manufactured Tobacco, growth of Canada West.**

1 David Rose, Hamilton, £1.

**Broom Corn Brush, 28 lbs.**

1 J W Belton, London, £1; 2 E A Harris, Hamilton, 15s.

**2 Pumpkins.**

1 Alex Shaw, Toronto, 10s; 2 Thomas Stock, East Flamboro, 7s 6d; 3 Luke Malloch, East Flamboro', 5s.

**Peck of White Field Beans.**

1 Luke Malloch, East Flamboro', 10s; 2 Robert Wells, Toronto, 7s 6d; 3 Philip Spaun, Ancaster, 5s.

**The Canada Company's Prize for Flax.**

112 lbs. of Flax.

1 James Fewster, Oshawa, £6 (this was protested against by Captain Shaw, of Toronto, on the ground that the sample was of last years growth); 2 (by the Association) Alex Shaw Toronto, £3 10s; 3 James Fewster, Oshawa, £1 10s.

**President's Prize.****5 bushels Winter Wheat.**

1 James Freeman, West Flamboro', £5.

112 lbs. Flax.

1 Daniel Campbell, Glengarry, £4.

**DISCRETIONARY PRIZES****Small Early Peas.**

1 George Yocum, Rainham, £1 10s; 2 Daniel Campbell, Glengarry, £1; 3 Charles Dale, Zoria, 10s.

**Early Potatoes.**

1 Alexander Shaw, Toronto, 10s.

**REMARKS BY JUDGES.**

The Judges called in the aid of Professor Wilson to give an opinion on the quality of the Flax, and his opinion agreed with that of the Judges. The Judges would say that the roots and seeds were of a very superior quality, and that the growers deserve great credit for the articles exhibited.

Signed

JAMES FLEMING,  
THOS. DAVIES,  
EDWARD WHEELER,  
CHAS. J. PERLEY.

**CLASS L.—HORTICULTURAL PRODUCTS.**

JUDGES—Wm Mundie, Hamilton; Col. Wilson, Norfolk; Robert Bell, Carleton Place; James Covington, Norfolk; Professor Croft, Toronto; Elias Snider, York.

**20 Varieties of Apples.**

1, Henry Turner, Toronto, 15s.; 2, George Lesslie, Toronto, 10s.; 3, Jacob Binckley, Ancaster, 5s.

**12 Table Apples—Full sort.**

1, Adolphus Case, Barton, 10s.; 2, John Ridge, Trafalgar, 7s. 6d.; 3, Stephen Wild, Barton, 5s.

**12 Apples—Winter sort.**

1, William Reid, Hamilton, 10s.; 2, J. Binckley, Ancaster, 7s. 6d.; 3, Lewis Spinger, Barton, 5s.

**12 Baking Apples.**

1, Thomas Sinclair, Hamilton, 10s.; 2, John Hatt, Hamilton, 7s. 6d.; 3, Adolphus Case, Barton, 5s.

**20 Varieties of Pears.**



1, George Lesslie, Toronto, 15s.

12 Pears—Full sort.

1, H. Turner, Toronto, 10s.; 2, Judge Campbell, Niagara, 7s. 6d.; 3, do do do 5s.

12 Table Pears—Winter sort.

1, Jacob Blain, Ancaster, 10s.; 2, Henry Turner, Toronto, 7s. 6d.; 3, A. S. Kennedy, Hamilton, 5s

12 Plums—Dessert.

1, William Reid, Hamilton, 10s.; 2, Moses Nickerson, Port Dover, 7s. 6d.; 3, Thomas Lottridge, Barton, 5s.

12 Baking Plums.

1, George Parkins, Hamilton, 10s.

12 Peaches—grown in open air.

1, Stephen Wild, Barton, 10s.; 2, Capt. Nichols Barton, 7s. 6d.; 3, H. Girouard, Hamilton, 5s.

12 Quinces.

1, Lewis Freeman, Barton, 10s.; 2, George Lesslie, Toronto, 7s. 6d.; 3, Jacob Blain, Ancaster, 5s.

4 clusters of Grapes, hot house.

1 William Busby, Toronto, 10s.; 2 do do do 7s. 6d.; 3 do do do 5s.

4 clusters Black Hamburg, hot house.

1 Mrs S A Boulton, Toronto, 10s.; 2 do do do 7s. 6d.; 3 Enoch Turner, Toronto, 5s.

4 clusters Black Grapes, grown in open air.

1 Thomas Sinclair, Hamilton, 10s.; 2 B F. Ball, Whitby, 7s. 6d.; 3 Judge Campbell, Niagara, 5s.

4 clusters White Grapes, grown in open air.

1 J B Ewart, Dundas, 10s.; 2 George Bender, Stamford, 7s. 6d.; 3 J D Humphreys, Toronto, 5s.

4 clusters Grapes of any other sorts.

1 J R Pettit, Grimsby, 10s.; 2 William Horning, East Flamboro, 7s. 6d.

Best and heaviest 2 bunches of Grapes.

1 W Busby, Toronto, 10s.; 2 Mrs S A Boulton, Toronto, 7s. 6d.; 3 James Lewis, Saltfleet, 5s.

12 Tomatoes.

1 G Gordon, Toronto, 10s.; 2 do do do 7s. 6d.; 3 Baron de Longueuil, Kingston, 5s.

12 Roots of Salsify.

1 Alex. Shaw, Toronto, 10s.; 2 Thomas Sinclair, Hamilton, 7s. 6d.; 3 Alexander Shaw, Toronto, 5s.

4 Heads of Brocoli.

1 John Gray, Toronto, 10s.

4 Heads Cauliflower.

1 John Gray, Toronto, 10s.; 2 do do do 7s. 6d.; 3 J B Ewart, Dundas 5s.

4 Heads Cabbage (Summer).

1 John Dynes, Burlington Beach, 10s.; 2 George Snooks, Saltfleet, 7s. 6d.; 3 James Orford, Toronto, 5s.

4 Heads Cabbage (Winter.)

1 Alex. Shaw, Toronto, 10s.; 2 D Falconer, do., 7s. 6d.; 3 G Gordon, do. 5s.

12 Carrots for Table.

1 E Hubbard, Guelph, 10s.; 2 S Wilson, Hamilton, 7s. 6d.; 3 L Pears, Toronto, 5s.

12 Roots of White Celery.

1 D Falconer, Toronto, 10s.; 2 do do do 7s. 6d.; 3 George Snooks, Saltfleet, 5s.

12 Roots Red Celery.

1 D Falconer, Toronto, 10s.; 2 George Snooks, Saltfleet, 7s. 6d.; 3 do do do 5s.

Dozen Capsicums.

1 Baron de Longueuil, Kingston, 10s.; 2 George Lewis, Toronto, 7s. 6d.; 3 do do do 5s.

6 Egg Plants, Purple.

1 Baron de Longueuil, Kingston, 10s.; 2 Professor Croft, Toronto, 7s. 6d.; 3 Wm Dixon, Hamilton, 5s.

12 Blood Beets.

1 James Orford, Toronto, 10s.; 2 George Snooks Saltfleet, 7s. 6d.; 3 Baron de Longueuil, Kingston, 5s

Peck of White Onions.

1 William Benham, Guelph, 10s.; 2 James Orford, Toronto, 7s. 6d.; 2 Baron de Longueuil, Kingston, 5s.

Peck of Yellow Onions.

1 Baron de Longueuil, Kingston, 10s.; 2 David Fisher, Bowmanville, 7s. 6d.; 3 James Wilds, Barton, 5s.

Peck of Red Onions.

1 D Falconer, Toronto, 10s.; 2 Baron de Longueuil, Kingston, 7s. 6d.; 3 Thomas Davis, Saltfleet, 5s.

Half Bushel White Turnips, Table.

1 George Snooks, Saltfleet, 10s.; 2 A W Taylor, Barton, 7s. 6d.; 3 E Hubbard, Guelph, 5s.

12 Early Horn Carrots.

1 James Orford, Toronto, 10s.; 2 G Gordon, Toronto, 7s. 6d.; 3 G Snooks, Saltfleet, 5s.

Dozen Dahlias, Named.

1 G Lesslie, Toronto, 10s.; 2 Judge Campbell, Niagara, 7s. 6d.; J Fleming, Toronto, 5s.

Bouquet of Cut Flowers.

1 G Lesslie, Toronto, 10s.; 2 Henry Girouard, Hamilton, 7s. 6d.; 3 J Fleming, Toronto, 5s.

Collection of Green House Plants, not less than 12 Specimens.

1 Thompson and Murray, Hamilton, 20s.; 2 A H Kennedy, do 15s.; 3 J Fleming, Toronto, 10s.

Collection of Annuals in Bloom.

1 Thomas Sinclair, Hamilton, 10s.; 2 W P McLaren, do 7s. 6d.; 3 J Fleming, Toronto, 5s.

Floral Ornament.

1 Jerold Meston, Hamilton, 1l.

Bouquet for Table.

1 W P McLaren, Hamilton, 10s.; 2 G Lesslie, Toronto, 7s. 6d.; 3 J Fleming, do 5s.

Canada Coffee 12 lbs.

1 Henry Girouard, Hamilton, 10s.

Water Melon.

1 Wm Dickson, 10s.; 2 James Hiskett, Niagara, 7s. 6d.; 3 William Dixon, Hamilton, 5s.

Musk Melon of any sort.

1 Wm Dixon, 10s.; 2 do do 7s. 6d.; 3 do do 5s.

Best and Largest collection of Dahlias.

1 G Lesslie, Toronto, 20s.

Collection of Verbenas, not less than 12 varieties.

1 J Fleming 15s.; 2 G Lesslie 10s.; 3 A S Kennedy, Hamilton, 5s.

\*Green House Plants.

J E Moore, Hamilton, 20s.

Collection of Native Plants, Dried and Named.

1 Craigie & Stinson, Hamilton, (with the highest commendation) £1 10s.

Vegetables.

1 George Snook, Saltfleet, 10s.; 2 Baron de Longueuil, Kingston, 7s. 6d.; 3 A A Baker, Guelph, 5

*Four Squashes for Table.*

1 J Hiskett, Niagara, 10s; 2 G Gordon, Toronto, 7s 6d; 3 Wm Dixon, Hamilton, 5s.

*20 Roots Chicory.*

1 G Pears, Toronto, 10s; Alexander Shaw, Toronto, 7s 6d.

20 lbs. *Chicory, manufactured from Roots grown in the Province this Season.*

1 G Pears, Toronto, 20s; 2 D Crawford & Toronto, 10s.

## DISCRETIONARY PRIZES.

*Vegetable Marrow.*

Robert Wells, Toronto, 7s 6d.

*Tomatoes.*

J D Humphreys, Toronto, 7s 6d.

*Cucumbers.*

J D Humphreys, do 7s 6d.

*Bird's Eye Capsicums.*

J D Humphreys, do 5s.

*Collection of Hybrid Perpetual Roses.*

H Gironard, Hamilton, 7s 6d; John Gray, Toronto, 5s.

*Okra & Martynia.*

J Fleming, Toronto, 7s 6d.

*Savoy Cabbage.*

J Fleming, Toronto, 7s 6d.

*Almonds.*

John Dynes, Saltfleet, 7s 6d.

*Nectarines.*

Wm Busby, Toronto, 7s 6d.

*Basket of open air Grapes.*

J D Humphreys, Toronto, 7s 6d.

*Capsicums.*

J D Humphreys, Toronto, 5s.

*Variety of Squash.*

G Gordon, Toronto, 7s 6d.

*Red Cabbage.*

G Gordon, Toronto, 7s 6d.

## REMARKS BY JUDGES.

A collection of Grains, Roots and Vegetables, with a report from the Normal School, highly recommended, as conveying information from Experiments. The Committee have great pleasure in reporting, that after having carefully examined the various specimen exhibited, and awarded the prizes to the best of their judgment, which was no easy task where all were so good, they find that the show of fruit is very superior, plants and flowers good for the late season, and vegetables and roots very fine. The arrangement of the specimens we consider as very creditable to the superintendent, Mr. Thompson.

Signed WM. WILSON,  
JAS. COVERNTON,  
WM. MUNDIE,  
R. BELL,  
ELIAS SNIDER.

## CLASS M.—AGRICULTURAL IMPLEMENTS.

Judges.—David Ghent, Wellington Square. James Munro, Niagara, Isaac Anderson, West Flamboro.

*Best Wooden Plough.*

1 H P Brown & Co. Woodstock, £2; 2 Archibald J Thompson, do £1 10; 3 Lawrence & Ellis, Trafalgar, 20s.

*Iron Plough.*

1 John Morley, Thorold, £2; 2 J McSherry, St. David's, £1 10; 3 Barr & Co., Norwich, 20s.

*Pair of Harrows.*

1 John Rapalje & Co. Port Hope, £1; 2 do do 15s; 2 do do 10s.

*Horse-Power Thrasher and Separator.*

2 A B Orr, Stratford, £3.

*Grain Drill.*

1 Adkins, Ellsworth, & Co., Hamilton, £3; 2 Wm Nickson, Gimmsby, £2; 3 Peter Murdoch, Ancaster, 20s.

*Seed Drill or Barrow.*

1 Archibald Cron, Brantford, 20s.

*Straw Cutter.*

1 P R Higly, Oshawa, 20s; 2 Lewis Reese, do 15s; 3 L Harris, Brantford, 10s.

*Smut Machine.*

1 John Gartshore, Dundas, £1 10s; 2 Moscrip & Allan, Cobourg, 15s.

*Grain Cutter.*

1 Edward Kelly, Ancaster, £2.

*Clover Cutting Machine.*

1 Wm Nickson, Grimbsy, £2.

*Two-Horse Waggon.*

1 James Kay, Galt, £3; 2 Thos Todd, Galt, £2; 3 James Kay, do 20s.

*Horse Rake.*

1 Adkins, Ellsworth & Co., Hamilton, 1l; 2 L Harris, Brantford, 15s.

*Reaping Machine.*

1 J Rapalje, & Co., Port Hope, 5l; Charles Wolencroft, Ancaster, 3l.

*Stump Extractor.*

1 John McLaren, Nelson, 2l.

*Mowing Machine.*

1 John Rapalje & Co., Port Hope, 5l; 2 Charles Wolstencroft, Ancaster, 3l.

*Farm Gate.*

1 David Fitch, Stamford, 15s.

*Cultivator.*

1 A Shaw, Waterloo, 1l 10s; 2 Adkins, Ellsworth & Co. 1l; 3 John Bruce, Dumfries, 10s.

*Set of Horse Shoes.*

1 J Johnston, Waterloo, 15s; 2 A Shaw, do 10s; 3 James Hobbs, Toronto, 5s.

*Half-dozen Hay Rakes.*

1 Samuel Bishop, Moulton, 10s.

*Half-dozen Narrow Axes.*

1 Henry H Date, Galt, 15s; 2 George Leavitt, Dundas, 10s.

*Half-dozen Scythe Snailths.*

1 William Allechin, Paris, 15s; 2 Geo Glassford, Brockville, 10s.

*Ox Yoke and Bows.*

1 T M Hineman, Cobourg, 15s; 2 do do do 10s;

*Grain Cradle.*

1 Peter Howell, Ancaster, 10s; 2 Archibald J Thompson, Woodstock, 5s.

*Half-Dozen Grain Shovels, Wood.*

3 Henry Pettit, Saltfleet, 5s

*Half-Dozen Iron Shovels.*

1 D F Jones, & Co Gananoque, 15s.

## PRESIDENT'S PRIZE.

*Plough for General Purposes.*

Morse and Robson, Trafalgar, 1l 10s.



DISCRETIONARY.

*Potato Digger.*

A Anderson, Markham, 11.

*Horizontal Sawing Machine.*

Michael Overholt, Blandford, 11 10s.

*Gang Plough.*

Rapalje & Co., Port Hope 11.

*Cultivator.*

Rapalje & Co. do 10s.

*Patent Iron Waggons and Buggy.*

Peter Murdoch, Ancaster, Diploma and 41 10s.

J B Marks, Kingston, Reid's Subsoil Plough (imported from England) Diploma. A very superior implement.

John Arnold, Toronto, Two Bentall's Ploughs and Scarifiers (imported from England) Diploma: Very useful and efficient implements.

H J Boulton, jr., County of Haldimand, Horse Hoe, Scarifier and Strawcutter (imported from England) Diploma. All these likewise, well made and very superior implements.

DONLAN'S FLAX MACHINE.

This machine was generously presented to the Board of Agriculture, by F. Widder, Esq., Commissioner of the Canada Company, and Exhibited by the Board. It attracted much attention, and upon trial proved satisfactory.

DRAINING PIPE MACHINE.

J H Charnock, just arrived from England, exhibited a working model of his Drain Pipe Machine, a very simple and ingenious contrivance, and apparently well adapted to the wants of this country. Diploma.

CLASS N.—DAIRY PRODUCTS, SUGAR, &c.

JUDGES.—Thomas Douglass, Nelson, Baron de Longueuil, Kingston, W. M'Micking, Stamford.

*Firkin of Butter not less than 56 lbs.*

1 Christopher Fothergill, Nelson, 21 10s; 2 J. Loghrin, Eramosa, 11 10s; 3 James Harvey, Barton, 11.

*Cheese, not less than 30 lbs.*

1 S T Casey, Thurlow, 21 10s; 2 Hiram Ranney, Dereham, 11 10s; 3 Thos. White, South Dumfries, 11.

*Two Stilton Cheeses, not less than 14 lbs. each.*

1 H Parsons, Guelph, 21 10s; 2 do do do 11 10s; 2 do do do 11.

*Butter not less than 20 lbs. in firkins, crocks, or tubs.*

1 James Lafferty, jr. Flamboro' West, 11 10s; 2 Richard Vyse, Trafalgar, 11; 3 Christopher Dale, Zorra, 10s.

*30 lbs. Maple Sugar.*

1 Wm. Phin, Eramosa, 20s; 2 Joseph Fraser, Pickering, 10s; 3 Jacob McMichael, Townsend, 5s.

*Sugar made by Indians.*

1 Chief Jos. Sawyer, Tuscarora, 15s.

*Starch.*

1 Levi Willson, Trafalgar, 15s.

*Soups (collection assorted).*

2 James Walker, Wentworth, 15s.

*6 kinds of Preserves.*

1 James Harvey, Barton, 15s; 2 Mrs. Croft, Toronto, 10s.

*Collection of Confectionery.*

1 W. T. Eccleston, Hamilton, £1 10s; 2 Terrence Brannigan, do, 20s; 3 J. Nasmith, Toronto, 10s.

PRESIDENT'S PRIZES.

*Best 3 Firkins of Butter, from 60 to 80 lbs. each put up in suitable kegs for export by sea.*

J Loghrin, Eramosa, 41.

*Best 2 Cheeses. of not less than 30 lbs. each.*

S T Casey, Thurlow, 21.

DISCRETIONARY PRIZES.

*Specimens Biscuits.*

J. Nasmith, Toronto, 15s.

*Flour.*

Charles Whitlaw, Paris, 15s; Absalom Griffin, Watertown, 15s; Garrett & Freeland, Hamilton, 10s.

*Saleratus.*

Wells, Cleveland & Co., Vankleek Hill, 10s.

*Vinegar.*

W. P. McLaren, Hamilton, 10s.

*Honey.*

John G. Teneyck, Binbrook, 15s.

*Oil Cake.*

Wm Lyman & Co., Montreal, 20s.

CLASS O. 1.—DOMESTIC MANUFACTURES

JUDGES.—Philip Vabinder, Norfolk; Francis Galbraith, Guelph; John Quarry, Dundas.

LEATHER AND FURS.

*Best Saddle and Bridle.*

1 Field & Davidson, Hamilton, 20s; 2 do do, 15s.

*Side Saddle.*

1 Field & Davidson, Hamilton, 20s.

*Specimen of Whips and Whip Thongs (collection assorted).*

1 A. C. Quimby & Co., Hamilton, 20s;—[This was protested against, on the ground that the articles were of foreign manufacture.]—2 Joseph Threlkeld, Toronto, 15s.

*Set of Farm Harness.*

1 Field & Davidson, Hamilton, £1 10s; 2 Wm. Gibson, Toronto, 20s.

*Set of Pleasure Harness.*

1 Field & Davidson, Hamilton, £1 10s; 2 do do, 20s; 3 do do, 10s.

*Travelling Trunk.*

1 Field & Davidson, 11 10s; 2 do do, 10s.

*Side of Sole Leather.*

1 John Dunn, Cooksville, 15s; 2 P. McKay, Dundas 10s; 3 do do, 5s.

*Side of Upper Leather.*

1 Hugh Finlayson, Paris, 15s; 2 P. McKay, Dundas, 10s; 3 Robert Forbes, Galt, 5s.

*Side of Harness Leather.*

1 Robert Forbes, Galt, 15s; 2 James Jackson, Galt, 10s; 3 Hugh Finlayson, Paris, 5s.

*Calf Skin, dressed.*

1 James Degier, Waterloo, 15s; 2 Hugh Finlayson, Paris, 10s; 3 James Jackson, Galt, 5s.

*Skin of Leather for Carriage Covers.*

1 P. McKay, Dundas, 20s; 2 do do, 10s.

*Fur Cap.*

1 W. H. Glassco, Hamilton, 15s; 2 do do, 10s; 3 do do, 5s.

*Fur Sleigh Robe.*

1 W. H. Glassco, Hamilton, 15s; 2 do do, 10s.

*Specimen Bootmakers' Work.*

1 S. Frost, Hamilton, 15s; 2 do do, 10s; 3 do do, 5s.

*DISCRETIONARY.**Turnip Tube.*

Joseph Threlkeld, Toronto, 10s.

*Belt Leather.*

George Bender, Stamford, 10s.

*Kip Skins.*

Hugh Finlayson, Paris, 10s.

*Cuse of Fancy Leather.*

W. A. Clark, Toronto, 7s. 6d.

*Cigars and Tobacco.*

David Rose, Hamilton, 7s. 6d.

*Furs and Gauntlets.*

(23 specimens) W. H. Glassco, Hamilton, 2l.

*Silk Huts.*

A. M. Foster, Hamilton, 15s.

*Set of Pleasure Harness,*

Arriving too late to be entered, James Nosworthy, Belleville, Diploma.

**CLASS O. 2.—MANUFACTURES IN METAL.**

JUDGES.—Wm. Lawson, Hamilton; Robert Scott, Guelph; Murray Anderson, London.

*Best Portable Steam Engine, (open to foreign competition).*

1 Wm. Lever, Guelph, Diploma and 5l.

*Model in metal of Engine, general Millwright's work or Machinery.*

1 George Skimmin, Hamilton, diploma and 2l; 2 do do, 20s.

*Specimen of Silversmith Work.*

1 William Morrison, Toronto, diploma and 2l.

*Iron Fire-proof Vault Door, (price considered).*

1 Charles Vale, Toronto, diploma and 2l.

*Hall Stoves.*

1 Gurneys & Carpenter, Hamilton, 20s.

*Parlor Stove for Wood.*

1 Gurneys & Carpenter, Hamilton, 20s; 2 O T Macklem, Chippewa, 10s; 3 do do, 5s.

*Parlor Stove for Coal.*

1 O T Macklem, Chippewa, 20s; 2 Gurneys & Carpenter, Hamilton, 10s.

*Cooking Stove, with Furniture.*

1 Gurneys & Carpenter, Hamilton, 1l. 10s; 2 do do, 20s; 3 do do, 10s.

*System of Ventilating Buildings, with model and description, and reducing the same to practical use.*

1 F G Willson, Saltfleet, diploma and 5l.

*Specimen of Iron Castings for stoves and general machinery.*

1 O T Macklem, Chippewa, diploma.

*Balance Scales.*

1 C Wilson, Toronto, 20s; 2 do do, 15s.

*Model Hot Air Apparatus.*

1 Ohver Tiffany and O T Macklem, Chippewa, 1l. 10s; 2 F G Willson, Saltfleet, 15s.

*Set of Cooper's Tools.*

1 Henry H Date, Galt, 15s

*Augurs from half inch to 2 inches.*

1 Bellhouse, Ireland & Co., Hamilton, 10s.

*Specimen 20 lbs. Cut Nails.*

1 Alexander Graham, Hamilton, 10s; 2 do do, 5s.

*Blacksmith's Bellows.*

1 J Dallyn & Son, Hamilton, 1l. 5s; 2 do do, 15s.

*Rifle.*

1 W P Marston, Toronto, 15s; 2 James Lewis, Dundas, 10s.

*DISCRETIONARY.**Model Water Wheel.*

B Fuller, Townsend, 10s.

*Boring Machine.*

B Fuller, Townsend, 10s.

*Steam Engine.*

John Gartshore, Dundas, 2l.

*Sewing Machine.*

Lawson & Brothers, Hamilton, 15s.

*Imitation Silver Work.*

Ruthven & Watson, Hamilton, 20s.

*Eight-day Gold Watch.*

P T Ware & Co., Hamilton, 20s.

*Electro Plate Ware.*

P T Ware & Co., Hamilton, 10s.

*Plated Harness Trimmings.*

E K Campbell, Hamilton, 10s.

*Fire Engine, for Provincial Fire Company.*

William Marks, Toronto, 20s.

*Small Fire Engine.*

William Marks, Toronto, 10s.

*Hose Carriage, for Toronto Hose Company.*

James Corbett, Toronto, 10s.

*Discretionary Prize.*

George Leavitt, Dundas, 15s.

*Assortment of Edge Tools.*

Henry H Date, Galt, diploma and 4l.; Smith Schneider & Co., Hamilton, 10s.

*Cutlery.*

Bellhouse, Ireland & Co., Hamilton, 10s.]

*Specimens Slating.*

Wm W Fox, Toronto, 10s.

*Railroad Spikes.*

Joseph Bourgard, Hamilton, 5s.

*Boiler Rivets.*

Joseph Bourgard, Hamilton, 5s.

*Boat spikes.*

Joseph Bourgard, Hamilton, 5s.

*Railway Picks.*

Henry H Date, Galt, 5s.

*Grubbing Hoes.*

Henry H Date, Galt, 5s.

*Ship Carpenter's Tools.*

Henry H Date, Galt, 10s.

*Firemen's Axes.*

Henry H Date, Galt, 5s.

*Steam Whistle.*

B F Smith, Hamilton, 10s.

*Tender Feeding Apparatus.*

Charles Garth, Montreal, 20s.

*Copper Boiler.*

Charles Garth, Montreal, 15s.



*Brass Work.*

Charles Garth, Montreal, 10s.  
*Railway Bar.*

F G Willson, Saltfleet, 5s.

*Mill and Circular Saws.*

John F Moore, Hamilton, 20s.

*Log Rules, and Specimens of all the Woods of Canada.*

Lawrence Lemon, Port Robinson, 20s.

*Locomotive and Steamboat Lamps.*

Cleveland & Bro., Hamilton, 20s.

*Railroad Passenger Car.*

Fisher, Williams, Brainard & Co., Hamilton, diploma.

*Patent Double Reflector.*

John Dean, Vienna, 10s.

**CLASS P.—CABINET WARE, CARRIAGES, &c.**

JUDGES—Thomas Bain, Hamilton; Thomas C. Dixon, London; Hutchison Clark, Hamilton; John Dods-worth, Hamilton.

*Side Board.*

1, Jacques & Hay, Toronto, £3; 3, Munro & Morton, Hamilton, £2; 3, William Bevis, Hamilton, £1.

*Veneers from Canadian Wood.*

1, William Bevis, Hamilton, 15s.

*Curled Maple.*

1, D. McNaughton, Onondaga, 10s.

*Graining Wood.*

1, H. Brabant, Toronto, £1 10s; 2, do do do £1.

*Centre Table.*

1, Jacques & Hay, Toronto, £1; 2, William Bevis, Hamilton, 15s; 3, do do do 10s.

*Easy Arm Chair.*

1, Munro & Morton, Hamilton, 15s.

*Best Sofa.*

1, Jacques & Hay, Toronto, £3.

*Dining-room Chairs.*

1, Jacques & Hay, Toronto, £1 5s.

*Work Box.*

1, W. Hayden, Toronto, 10s.

*One-horse Pleasure Carriage.*

1, Williams & Cooper, Hamilton, £2; 2, do do do £1 10s. 3, Thomas Todd, Galt, 10s.

*Two-horse Pleasure Carriage.*

1, Williams & Cooper, Hamilton, £2; 2, do do do £1 10s.; 3, P. Pronguey, Hamilton, 15s.

*Corn Brooms.*

M. B. Beasley, Hamilton, 10s.

*Wooden Pail.*

1, James Young, Galt, 5s.; 2, William Gordon, Hamilton, 3s. 9d.

*Washing Machine.*

1, S. Cole, Brantford, 10s.; 2, Abraham Vanevery, Ancaster, 5s.

*Churn.*

1, Jacob Wood, Oshawa, 15s.; 2, Adkins, Ells-worth & Co., Hamilton, 10s.

*Model Beehive.*

Thomas Hatt, Ancaster, 10s.

*Split Shingles.*

1, R. J. Willy, Hamilton, 10s.

**DISCRETIONARY PRIZE.**

*Assortment of Cooperage, &c.*

William Gordon, Hamilton, 11. 10s.

*Bedstead.*

1, Jacques & Hay, Toronto, 21.; 2, Nelson Ogg Wellington Square, 7s. 6d.

*Tool Chest.*

James Spaulding, Hamilton, 15s.

*Pigeon House.*

John Waters, Hamilton, 2s. 6d.

**CLASS Q.—WOOLLEN AND FLAX GOODS.**

JUDGES.—Henry Watson, Guelph; G. A. Buck, Bertie; James Loghrin, Eramosa.

*Best piece of not less than 12 yards of Woollen Carpet.*

Wm. Schuyler, Townsend, £2; 2, M. C. Nick-erson, Port Dover, £1.

*Best pair Woollen Blankets.*

John Paterson, Dundas, £2; 2, Jacob M. Michael, Townsend, £1; 3, do, Daniel Campbell, Glengarry, 10s.

*Best Counterpane.*

Ezekiel Smith, Grimsby, £1; 2, do do do, 15s; 3, do, Daniel Campbell, Glengarry, 10s.

*Best piece 12 yards Flannel.*

Alvey German, Dumfries, £1; 2, John Paterson, Dundas, 15s; 3, do do do 10s.

*Best piece Satinett 12 yards.*

G. C. Hineman, Ancaster, £1; 2, Wm. V. Disher, Grantham, 15s; 3, W. A. Clarke, Toronto, 10s.

*Best piece Broad Cloth, from Canadian Wool.*

Wm. V. Disher, Grantham, £2; 2, do do, £1.

*Best piece Flannel, 10 yards, not factory made.*

Dan. Campbell, Glengarry, 15s; 2, Richd. Springer, Glanford, 10s; 3, Levi Wilson, Trafalgar, 5s.

*Best piece Winter Tweed, 12 yards.*

G. C. Hineman, Ancaster, £1; 2, W. A. Clarke, Toronto, 15s; 3, do do, 10s.

*Best piece Fulled Cloth, 10 yards, not factory made.*

Wm. Steel, Humberstone, 15s; 2, Levi Wilson, Trafalgar, 10s.

*Best Shawls, not factory made.*

R. Springer, Glanford, 15s; 2, T. M. Hineman, Co-bourg, 10s; 3, Mrs. L. Steele, Humberstone, 5s.

*Best piece Linen Goods.*

Daniel Campbell, Glengarry, 15s; 2, David Smellie, Vaughan, 10s; 3, do do do, 5s.

*Best Samples of Flax or Hemp Cordage, not less than 28 lbs.*

A. and D. McGregor, Toronto, 15s; 2, Henry Mc-Stravich, Hamilton, 10s; 3, A. and D. McGregor, Toronto, 5s.

*Best 12 Linen Bags manufactured from Flax growth of Canada.*

David Smellie, Vaughan, £1; 2, Thomas Muir, Grimsby, 15s; 3, David Smellie, Vaughan, 10s.

*Discretionary.*

Lawson & Brother, Hamilton, Case of Clothing and Millinery, 10s; A. M. Titus, Brantford, lot of Clothing, 10s; John Patterson, Dundas, Woollen Yarn, 5s; W. A. Clarke, Toronto, Case of Clothing, 10s; do do, Woollen Yarn, 10s; Joseph Frazer, Pickering, Fulled Cloth, 10s; Robert Budge, Port Hope, Dress Coat, 7s 6d; J. Walker, Bowmanville, specimens of Wool-len Yarn, 15s.

## CLASS R.—LADIES' DEPARTMENT.

JUDGES.—Mrs. Sheriff Thomas, Mrs. Jason, Mrs. Dickenson, Mrs. Judge O'Reilly, Mrs. Ritchie, Mrs. Strangman.

*Best specimen of Crotchet Work.*

Miss M. Sinclair, Brockville, £1; 2, Miss Cosens, Toronto, 15s; 3, Mrs. John Galbraith, Hamilton, 10s.

*Best specimen of Fancy Netting.*

Mrs. Crofts, Hamilton, 15s; 2, Jane and Mary McDowell, Hamilton, 10s.

*Best Embroidery in Muslin.*

Mrs. Cantley, Oakville, 15s.

*Best Embroidery in Silk.*

Mrs. Fairclough, Hamilton, 15s; 2, do do, 10s; 3, G. H. Cosens, Hamilton, 7s 6d.

*Best Embroidery in Worsted.*

Mrs. John Galbraith, Hamilton, 15s.

*Best specimen of Worsted Work.*

Mrs. Blythe, Hamilton, 15s; 2, do do, 10s; 3, Jane A. Simpson, Hamilton, 7s 6d.

*Best specimen of Raised Worsted Work.*

Mrs. Fairclough, Hamilton, 15s.

*Best specimen of Quilts in Crotchet.*

Juliana Cook, Toronto, £1; 2, Mrs. Bowes, Trafalgar, 15s.

*Best specimen do. in Knitting.*

Mrs. H. M. Spencer, Dundas, £1; 2, Mrs. Luke Malloch, Flamboro' East, 15s; 3, Mary Evans, Hamilton, 10s.

*Best specimen do. in Silk.*

2 Mrs. P. Jones, Brantford, 15s.

*Best specimens in Braiding.*

Mrs. Christie, Niagara, 15s; 2, Mrs. Burn, Toronto, 10s; 3, Miss Panton, Hamilton, 7s 6d.

*Best specimen of Wax Fruit.*

Mrs. Beck, Hamilton, 15s; 2, Mrs. John Galbraith, do, 10s.

*Best specimens of Wax Flowers—Prizes equally divided between*

Mrs. Beck, Hamilton, 15s; Miss J. Campbell, Dundas, 15s.

*Best Pair Woollen Socks.*

Mrs. Wilson, Trafalgar, 15s; 2, Miss Hewlett, Toronto, 7s 6d; 3, Mrs. E. D. Moore, Toronto, 5s.

*Best Pair Woollen Stockings.*

Mrs. Thompson, Hamilton, 10s; 2, Mrs. E. D. Moore, Toronto, 7s 6d; 3, Mrs. Thompson, Hamilton, 5s; 4, (extra,) Miss Mary Cornell, Beverly, 5s.

*Best specimen of Gentlemen's Shirts.*

Mrs. Furly, Beverly, 15s. One exhibited by Mrs. Wanless, London, highly recommended but not entered for competition.

*Best Pair of Woollen Mittens.*

T. M. Hineman, Cobourg, 10s; 2, Miss Hewlett, Toronto, 7s 6d; 3, Mrs. Charles Bourn, Cobourg, 5s.

*Best Pair Woollen Gloves—Prizes equally divided between*

Miss M. Hewlett, Toronto, 7s 6d; Jacob McMichael, Townsend, 7s 6d; Mrs. Thompson, Y. Township, 7s 6d.

*Best Hat of Canadian Straw.*

Miss J. Silverthorn, Cooksville, 10s; 2, Mrs. Thompson, York Township, 7s 6d; 3, do do do, 5s.

*Best Bonnet of Canadian Straw.*

Miss J. Silverthorn, Cooksville, 10s; 2, Miss McLaren, Nelson, 7s 6d; 3, do do do, 5s.

*Discretionary.*

Mrs. Fisher, Barton, Quilt, 15s; Miss J. Silverthorn, Cooksville, do, 15s; Mrs. J. Galbraith, Hamilton, Toilet Cover, 15s; Mrs. J. Bowes, Trafalgar, Countertop, 10s; Mrs. Duffield, Hamilton, Leather Picture Frame, 15s; Mrs. Bowman, Molton, Table Mats, 10s; Mrs. H. Smith, Glanford, Ladies' Skirt, 10s; Mrs. Griggs, Oakville, Down Quilt, 15s; Mrs. Beck, Hamilton, Wax Shells and Figures, 15s; Mrs. D. Campbell, Glengarry, Shepherd's Plaid, Linen Table Cloth, and Linen Stockings, 15s.

## CLASS S.—FINE ARTS, &amp;c.

JUDGES.—Rev. Mr. Evans, Norfolk; Sheriff Thomas, Hamilton; G. W. Allan, Toronto; J. Burrell, Pickering; J. B. Harrison, Waterdown.

*Oil—Professional List—Historical Painting Canadian Subject.*

Paul Kane, Toronto, diploma and £3; 2, do do, £2.

*Landscape, Canadian Subject.*

George Reid, Hamilton, diploma, and £3; 2, Robt. Whale, Burford, £2 10s.

*Animals (grouped or single.)*

Paul Kane, Toronto, diploma and £3.

*Portrait.*

Robert Whale, Burford, diploma and £2 10s; 2, Paul Kane, Toronto, £1 10s.

*In Water Colours.—Landscape, Canadian Subject.*

J. B. Wandesford, Hamilton, diploma, and £2 10s.

*Portrait.*

J. B. Wandesford, Hamilton, diploma, and £2; 2, Hoppner Meyer, Toronto, £1.

*Flowers.*

J. B. Wandesford, Hamilton, diploma and £1 10s.

*Pencil and Crayon—Pencil Portrait.*

J. B. Wandesford, Hamilton, diploma and £1 10s; 2, do do do, £1.

*Pencil Drawing.*

George Reid, Hamilton, diploma and £1 10s; 2, L. O'Brien, Toronto, £1.

*Crayon Drawing.*

George Reid, Hamilton, diploma and £1 10s; 2, Bryce Smith, Toronto, £1.

*Coloured Crayon.*

H. L. O'Brien, Toronto, diploma and £1 10s; 2, Hoppner Meyer, do, £1.

*Amateur List.—Oil.—Landscape, Canadian Subject.*

Wm. Bartram, Hamilton, diploma and £2 10s.

*Animals, (grouped or single.)*

Mrs. Hoppner Meyer, Toronto, diploma and £2 10s; 2, R. J. Griffith, do, £1 10s.

*In Water Colours.—Landscape, Canadian Subject.*

Captain Caddy, Hamilton, diploma and £2; 2, do do, £1.

*Portrait.*

Mrs. P. Jones, Brantford, diploma and £1 10s.

*Flowers.*

J. D. Humphreys, for E. C. F., Toronto, diploma and £1; 2, Miss Lydia Elliot, do, 15s.

*Pencil and Crayon.—Pencil Drawing.*

Mrs. Hoppner Meyer, Toronto, diploma and £1; 2, Miss Maughan, Toronto, 15s.

*Crayon Drawing.*

Mrs. J. B. Hurlburt, Hamilton, Diploma and £1; 2, R. J. Griffith, Toronto, 15s.

*Coloured Crayon.*

Miss Maughan, Toronto, Diploma, and £1; 2, best do do do 10s.



*Daguerreotype, best collection, the exhibitor to have operated in Canada for the last twelve months.*

Robert Milne, Hamilton, Diploma and £1 10.

*Lithographic drawing unprinted.*

Mrs. Hoppner Meyer, Toronto, Diploma and £1 10; 2, Thomas Wheeler, do £1.

*Wood Engraving.*

F. E. Wyman, Toronto, Diploma and £1 10s; 2, do do £1.

*Engraving on Steel.*

Hoppner Meyer, Toronto, Diploma and £1 10s.

*Best Specimen of Seal Engraving.*

Thomas Wheeler, Toronto, Diploma and £2.

*Best Carving in Wood.*

David Fleming, Toronto, Diploma and £2.

*Carving in Stone.*

James Thompson, Hamilton, Diploma and £2.

*Best Modelling in Plaster.*

James Dow, Hamilton, Diploma, and £2.

*Best Ornamental Turning.*

Wm. Bevis, Diploma, and £1.

*Ornamental Writing.*

Thomas Hockaday, Hamilton, diploma, and £1; 2, do do do 10s.

*Stuffed Birds.*

John Henderson, £1; 2, do Wm. Baker, Oakville, 10s.

*Picture Frame, Gilt.*

C. B. Wharam, Toronto, £1; 2, do do do do 10s.

*Dentistry.*

Miles B. Stennett, Hamilton, diploma, and £1; 2, do D. O. French, Toronto, 10s.

*Discretionary.*

Mrs. Meyer, Toronto, Oil Painting, .....	£1	0	0
Robert Whale, Burford, Oil Landscape, .....	1	0	0
Do do do Painting, .....	1	0	0
Mrs. Atkins, Hamilton, Water Colours, on rice paper, .....	1	10	0
A. C. Verner, Trafalgar, Syntypography, ..	15	0	
F. A. Verner, Trafalgar, Monochromatic drawing, .....	15	0	
Richard Stevens, Woodhouse, Original Oil Painting, .....	15	0	
Alex Davidson, Hamilton, do, .....	1	0	0
Miss Murton, Hamilton, Bouquets cut paper flowers, .....	1	0	0
Mrs. Duffield, Hamilton, Monochromatic drawing, .....	15	0	
H. H. and M. Hurd, Hamilton, Stone Engraving, .....	1	0	0
James Pollock, Hamilton, Sculpture, .....	1	0	0
do do Worked Marble, .....	1	10	0

#### CLASS T.—BOOKBINDING, PAPER, &c.

JUDGES—Wm. Benson, Port Maitland; N. Merritt, Barton; E. Simmons, Hamilton.

*Best Specimen Bookbinding.*

George Barnes, Hamilton 17; this was protested against by James Black, of Hamilton, on the ground, that the article was of Foreign workmanship—on revision a first class prize awarded to Black for a specimen of illuminated binding, £1; 2, do S. Hewson, 15s.

*Best ream of Printing Paper.*

Robert Spence, Dundas, £1.

#### Prizes offered by A Canadian.

*Best collection of School Books, printed and bound in Canada, for the use of Common Schools, and Grammar Schools.*

Hew Ramsay, Montreal, diploma, and £2 10.

*Best collection of Books, Maps, &c., published in Canada, descriptive of Topography, History, &c., of the Province.*

Hew Ramsay, Montreal, diploma, and £2 10s.

REMARKS BY JUDGES.

The Judges on the above consider the articles well worthy of Prizes but beg to express their regret that there was so little competition.

Signed EDWARD M. SIMONS,  
WM BENSON,  
N. MERRITT.

#### CLASS V.—INDIAN PRIZES.

JUDGES—Wm Benson, N. Merritt, E. Simons.

*Tobacco Pouch worked with Porcupine Quills.*

Rev. P. Jones, Brantford, 5s.

*Best Pipe of Peace.*

Rev. P. Jones, Brantford, 15s.

*Best Fruit Basket.*

Rev. P. Jones, Brantford, 7s 6d.

*Discretionary Prizes in Indian Department, Bowl and Ladle.*

Rev. P. Jones, Brantford, 5s.

#### CLASS V.—POTTERY.

JUDGES.—H. Parsons, Guelph; E. C. Fisher, Etobicoke; Alex. Shaw, Toronto.

*Best specimen of Pottery.*

Morton & Co., Brantford, £1; 2, do James Freed, Dundas, 15s.

*Best specimen Draining Tile.*

Joshua Sisley, Scarborough, £2 10; 2, do do do do £1; 3, do do do do 10s.

*Best Dozen Bricks.*

Daniel New, Hamilton, 10s; 2, do Wm. H. Allen, Wilmot, 5s.

REMARKS BY JUDGES.

The committee on this class regret that the draining tiles exhibited were not of a better quality.

Signed H PARSONS,  
ALEX SHAW,  
C E FISHER.

#### CLASS W.—FOREIGN STOCK AND IMPLEMENTS.

JUDGES.—John Harland, Guelph; John Carr, Guelph; L. Parkinson, Eramosa; Thomas Locker, Malahide; Levi Fower, Fingal; James Daniell, London.

*Premiums for Stock and Implements belonging to persons residing out of Canada.*

*Best Durham Bull.*

D. McHardy, Monroe County, N.Y., diploma and £2 10s.

*Best Stallion for Agricultural purposes.*

Stephen Powell, Lewiston, diploma and £3; 2, do Wm. Runyan, Philadelphia, £3.

*Best Blood Stallion.*

Foot and Farnam, Lockport, N. Y., diploma and £3;  
2, do Lyman Flanders, Gambrie, New York, £3.

*Best Merino and Saxon Ram.*

Elias Sharp, Lockport, N. Y., diploma and £1 10s.;  
2, do C. N. Leet, do £1.

*Best two Merino or Saxon Ewes.*

Elias Sharp, Lockport, N. Y., diploma and £1 10.

*Best Boar.*

Wm. Runyan, Philadelphia, £1 10.

## REMARKS BY JUDGES.

A bull was exhibited as a thoroughbred Durham in this class, well known to the Judges as a grade animal and actually bred in Canada. The Cows shown as Durhams were entirely unworthy, one of them black.

Signed

JOHN HARLAND,  
L PARKINSON,  
JOHN CARD.

## AGRICULTURAL IMPLEMENTS.

*Best Plough.*

J. Rapalje & Co., Rochester, N. Y., diploma and £1.

*Best Subsoil Plough.*

J. Rapalje & Co., Rochester, N. Y., diploma and £1.

*Best Pair Harrows.*

J. Rapalje & Co., Rochester, N. Y., diploma and £1.

*Best Fanning Mill.*

J. Rapalje & Co., Rochester, N. Y., diploma and £1.

*Best Horse Power Thrasher and Separator.*

J. Rapalje & Co., Rochester, N. Y., diploma and £2 10.

*Best Seed Drill or Barrow.*

J. Rapalje & Co., Rochester, N. Y., £1.

*Best Straw Cutter.*

J. Rapalje & Co., Rochester, N. Y., £1.

*Best Portable Grist Mill.*

J. Rapalje & Co., Rochester, N. Y., diploma and £2 10s.

*Best Grain Cracker.*

J. Rapalje & Co., Rochester, N. Y., £1 10.

*Best machine for Cutting Roots for Stock.*

J. Rapalje & Co., Rochester, N. Y., £1.

*Best Corn and Cob Crusher.*

J. Rapalje & Co., Rochester, N. Y., £1.

*Best Clover Machine.*

J. Rapalje & Co., Rochester, N. Y., diploma and £2

*Best Reaping Machine.*

J. Atkins, Chicago, Illinois, diploma and £2 10s.

*Best Cultivator.*

J. Rapalje & Co., Rochester, diploma and £1 5s.

*Best assortment of Agricultural Implements and Edge Tools.*

J. Rapalje & Co., Rochester, diploma and £5.

*Discretionary Prizes in Foreign Class.*

Wm. Runyan, Philadelphia, Horse Shoe, 5s; John E. Wilder, Boston, Patent Salamander Sate, diploma;  
J. Rapalje & Co., Rochester, variety of implements &c., £2 10; Thomas Lewis, Utica, Lot of Shanghai, and other fowls, £1; Downs & Co., Seneca Falls, N. Y., Pumps, Engines, &c., diploma and £2 10; C. F. Crossman, Rochester, Indian Corn, 10s; Cowing & Co., Seneca Falls, N. Y., Garden Engines, Pumps &c., diploma and £1 5s.

## REMARKS BY JUDGES.

The Judges award a prize to Messrs. Rapalje & Co.

for the best assortment of Implements. They are unable to set forth the merits of all the different articles exhibited, but they without doubt reflect much credit upon the exhibitors, both as to the manner in which they are manufactured and their usefulness.

Signed

JAMES DANELL,  
THOS LOCKER,  
LEVI FOWLER.

## PROVINCIAL AGRICULTURAL ASSOCIATION.

The following is a list of the Prizes awarded by the Provincial Agricultural Association for Reports and Essays for the current year.

Professor Hind, Trinity College, £20 for the best County Agricultural Report—(York, Ontario and Peel;) Mr. John Lynch, Brampton, £15 for the 2nd best Report—County of Peel; Mr. A. F. Scott, Brampton, £10 for the 3rd best Report—(County of Peel;) Mr. John Lynch, Brampton, £5 for the 4th best Report—(County of Grey;) Mr. F. W. Thomson, York, £5 for the best Report on the results of the application of Bone Manure; Mr. Thos. McMicking, Stamford, Welland, £10, the President's Prize, for the best essay written by a person under 25 years of age, on the "Dignity of Agricultural Labour."

The President's Prize awarded to the County Agricultural Society of that County taking the greatest number of the Prizes offered by him.

The County of Wentworth, £10.

## COMPARATIVE VIEW OF COMPETITION

Brought out at Hamilton 1853, and Toronto 1852.

The number of articles entered for exhibition, fell somewhat short of that at Toronto. At the latter named place the number was 3,042, and at Hamilton 2,804. The following comparative table will exhibit the competition brought out in the various departments, this year and last year:—

	Toronto, 1852.	Hamilton, 1853.	Inc.	Dec.
Durham Cattle.....	81	88	7	
Devons.....	30	53	23	
Herefords.....	5	5	0	
Ayreshires.....	21	46	25	
Grades.....	33	48	15	
Fat Cattle & work'g Oxen	21	18	—	3
Blood Horses.....	16	46	30	
Agricultural do.....	212	170	—	42
Leicester Sheep.....	79	139	60	
Southdown do.....	39	48	9	
Merino & Saxon do.....	33	35	2	
Fat Sheep.....	18	13	—	5
Large Breed Pigs.....	33	28	—	5
Small do do.....	15	27	12	
Poultry.....	57	50	—	7
Agricultural Productions	336	319	—	17
Horticultural Products..	482	525	43	
Agricultural Implements	136	145	9	
Dairy Products, &c.,... 82		102	20	
Domestic Manufactures..	115	104	—	11
Do. in Metals, &c.....	53	99	46	
Cabinetware, Carriages, &c.....	29	65	36	
Woolen & Flax Goods..	56	65	9	
Ladies Department....	229	266	37	
Fine Arts, &c.....	201	182	—	19
Bookbinding, &c.....	30	6	—	24
Indian Prizes.....	3	13	—	10
Pottery &c.....	12	9	—	3
Foreign Department....	72	90	18	
	2519	2804		
Discretionary Class....	523	—		
	3042	2804		
Total Decrease.....			238	



It is necessary in explanation of the above statement to say that the entries were taken this year in a somewhat different manner to last year, the articles not enumerated in the prize list being entered along with the particular class to which they most naturally belonged instead of a separate book, as last year.—Dividing the 523 non-enumerated entries among the various classes, (the largest part of them being in the Horticultural, Manufacturing, Implements, Fine Arts, and Ladies Department,) it will be found that the scale in many of the classes will be turned in favour of Toronto.

# NORMAL SCHOOL EXPERIMENTAL FARM.

*To the REV. DR. RYERSON, Chief Superintendent of Education.*

REV. SIR,—I have the honor to submit to you the accompanying report and descriptive list, containing the results obtained from the crops grown on the Experimental Farm ground attached to the Normal School and Model Schools, which, together with thirty-seven specimens of grains, roots, vegetables, and fruits, I prepared and sent to the Secretary of the Agricultural Association, for exhibition at their last great annual show, held at Hamilton. Judging that you might wish to disseminate, or have it for reference, I enclose a copy of my letter to Professor Buckland.

I might mention, and that from personal observation, that this collection of specimens attracted much attention from a great portion of the visitors.

I am also very happy in having to report most favorably of the ornamental part of the grounds. The shrubs and trees, with very few exceptions, have all taken very well; and many of them have grown since planted in the spring.

The grass has done remarkably well, as every one visiting the grounds may see. It is now, at this present time, much finer and closer than many a lawn which has been made for years.

The show of annuals and other summer flowers, which were put in temporarily, until the grounds were so far finished as to allow of the botanical arrangements, have done well, making the grounds gay during the whole season.

The portion of the grounds on the east side of the building, which has wanted so much filling up, is now very nearly completed, and I will have the walks laid down in it this fall. In the spring, I shall be able to sow it down and plant it uniformly with the other parts of the grounds, after which the permanent botanical arrangement, as originally contemplated, will be proceeded with.

The following are the reports of the Judges upon the specimens sent from the Schools:

The Judges on the agricultural productions in whose class the specimens were entered, say:

"We have much pleasure in recommending the collection of grains, roots, and vegetables, from the Normal School grounds, to favorable notice, and consider them in every way worthy of the Institution, as also being brought out in a manner well calculated to convey both useful and interesting information."

The Judges on the horticultural department also noticed them as follows:

"A fine collection of grains, roots, and vegetables with a report, from the Normal School grounds, highly commendable, as conveying information from experiments."

I am, with respect, Rev. Sir,  
Your most obedient servant,

WILLIAM MUNDIE.

Toronto, October 25th, 1853.

*To the Secretary of the Provincial Agricultural Association.*

SIR,—Regarding the accompanying thirty-seven specimens of grain, roots, vegetables, and fruits, sent for exhibition from the Experimental Farm ground attached to the Normal Schools at Toronto, I would beg to state that they are not exhibited for competition, or for anything very extraordinary in themselves, but with a view to explain the experiments which have been made, and the results obtained therefrom. The details are more particularly described on the cards attached to the various specimens.

The soil on which the operations have been carried on is, with a few slight exceptions (which are noted on the descriptive cards), of a very light sandy nature, lying on a deep bed of blue clay, very tenacious, and generally about an average depth of from three to four feet from the surface. In short, the evil was of such a character when we commenced, as, at a distance of twenty or thirty miles from a city or town, would be pronounced poor sandy common, which would not pay for cultivation.

The operations for improving it were commenced last fall; the first step was to underdrain it; the drains were put in at the average depth of three feet six inches, and twenty-four feet apart. The whole was then sub-trenched, that is—about one foot of the surface soil was dug up and thrown forward in trenches, and the under, or sub-soil, was stirred and left in the bottom in its original place: the loosening being about an average depth of twenty inches; and although done with the spade, was made to resemble sub-soil ploughing as nearly as possible; or what might be equally well done with the subsoil plough, if operating on a large scale.

In the process of cropping in the spring, the ground, generally, got a moderate dressing of manure, which consisted of about two-thirds stable-yard manure, with one-sixth street scrapings, and one-sixth leached ashes; these were intimately mixed and broken up. The quantity given was varied according to the nature of the crop intended, a minute detail of which would be too lengthy for this paper.

On the whole, considering the originally poor and light nature of the land, and also the great dryness of the past summer, the results obtained have been most satisfactory, both on the cultivated or farm portion of the land, and also on the portion laid out in grass lawn, fruits, flowers, and shrubbery, fully establishing the great benefits to be derived from underdraining and subsoiling, especially on light shallow soils lying on retentive under-strata, as mentioned above.

It may be taken as a certainty, that the deeper the subsoil is moved and loosened, there will be

a proportionate retention of moisture in the ground; not stagnant moisture (the drains take off that), but active, vegetative, growing moisture, accompanied with an equally growing, genial heat, which the loosening of the subsoil allows to penetrate to a depth which, before the draining and loosening of the soil took place, was utterly impossible; as then, instead of the heat penetrating or being absorbed into the earth, to benefit and nourish the crops at the roots, where they most wanted it, the hot sun leaving only the shallow surface soil to act upon, would burn up all vegetation to any depth that ever the plough had stirred. And that surface soil becoming completely dried up, would ultimately radiate or throw off a great portion of the heat into the already too much heated atmosphere, producing that scorching arid dryness, which is so disagreeable to the animal functions, and, of course, may be fairly presumed to be no less so to the vegetable.

In analysing the above, it seems to stand thus: that so long as the soil is undrained, and untrenched or *subsoiled*, the heat penetrates but a very short distance into it; consequently, the drying up of that small portion is so complete, that evaporation from the moist bottom soil almost ceases. And what little evaporation there may be, is so quickly dried up by the half-roasted surface soil, as to be of very little avail to the growing crops. On the other hand, when the land is drained and subsoiled, then the moisture, from a greater depth, will be encouraged or drawn to the surface by the influence of the sun's heat, and in coming up through the deeper and lower soil, will be caught or absorbed, and, as it might be termed, held in solution by the soil, ready to act in the most beneficial manner upon vegetation.

Finally, allow me to recapitulate the tenor of the above in one single paragraph.

The drains draw away all stagnant moisture: subsoiling loosens the under soil, and allows this stagnant moisture to run to the drains, it allows the roots of the crops to penetrate to a greater depth, it allows the sun's heat to warm and moisten the soil as above described, it allows the atmosphere to circulate in the soil, purifying and sweetening the whole—the same as good ventilation does our houses. And when all these advantages are brought to bear upon the land, it will not require any great stretch of imagination to anticipate what the results will be with respect to the crops. What, then, may the results be with respect to the health and salubrity of the climate? Why, where these improvements are extensively carried out, the chances of general good and vigorous health will be increased in a twenty-fold ratio. And being assured of these very great benefits, both to the health of climate and the productiveness of the soil, it behoves every one having a piece of land to improve, to be up and doing, beginning with a little, and that little once well done, will assist in doing more, until, in a very few years, those who now begin in a right spirit will see it to be so much to their own interest in every point of view, that they will consider a certain portion of such improvements

every season, as necessary as the common ploughing of their land. And then no great fear but neighbor will follow neighbor in doing the same thing, if it interests them.

Then they may safely say good bye to fever and ague, rheumatism, &c., and good bye to burnt-up grass fields, rusted wheat, and many other drawbacks consequent on an impoverished state of the land.

To you, Sir, individually, it would be presumptuous to write the above; but to you, as the medium of addressing the Association and the public at large, I have addressed it.

And now, trusting that the interest of the subject may be an excuse for trespassing upon you at such length, I shall proceed to give you the result of the various crops in detail, of which the articles sent for exhibition are fair specimens.

The following is collected from the descriptive card, attached to the specimens:—

#### BARLEY.

- No. 1, sown May 21st, at the rate of  $1\frac{1}{2}$  bushels seed per acre; produce, at the rate of 55 bushels per acre; weight, per bushel, 61 lbs. Soil light.
- No. 2, sown May 24th, at the rate of  $2\frac{1}{2}$  bushels seed per acre; produce, at the rate of 38 bushels per acre; weight, per bushel, 62 lbs. Soil very light.
- No. 3, sown May 26th, at the rate of 2 bushels seed per acre; produce, at the rate of  $52\frac{1}{2}$  bushels per acre; weight, per bushel, 61 lbs. Soil sandy.
- No. 4, sown May 19th, at the rate of  $1\frac{5}{8}$  bushels seed per acre; produce, at the rate of 53 bushels per acre; weight, per bushel, 61 lbs. Sandy soil.
- No. 5, sown May 19th, at the rate of  $1\frac{1}{2}$  bushels seed per acre; produce, at the rate of 36 bushels per acre; weight, per bushel, 63 lbs.—Soil light.

*Note*—The barley was all of one kind, but sown at different thicknesses; and I might mention that the above weights show the highest point that it was possible to dress it up to.

#### COMMON OATS.

- Canadian white, sown May 21st, at the rate of  $2\frac{1}{2}$  bushels per acre; produce, at the rate of 77 bushels per acre; weight, per bushel, 33 lbs. Soil, black deposit.
- Canadian black, sown May 21st, at the rate of  $2\frac{1}{2}$  bushels per acre; produce, at the rate of  $74\frac{1}{2}$  bushels per acre; weight, per bushel,  $33\frac{1}{2}$  lbs. Soil, vegetable deposit.
- Kildrummy, imported, sown May 20th, at the rate of 3 bushels per acre; produce, at the rate of 60 bushels per acre; weight, per bushel, 36 lbs. Soil, black deposit, with sand.
- Scotch Barley Oats, imported, sown May 20th, at the rate of  $2\frac{1}{2}$  bushels per acre; produce, at the rate of 58 bushels per acre; weight, per bushel, 35 lbs. Soil, black deposit.
- Sandwich Oats, imported, sown May 20th, at the rate of  $2\frac{1}{2}$  bushels per acre; produce, at the rate of  $66\frac{1}{2}$  bushels per acre; weight, per bushel, 34 lbs. Soil, black deposit.



Corn, Early White, sown May 27th, 3 feet square apart in hills, 3 seeds; produce, at the rate of 10 tons per acre. Sandy soil.

Corn, Sweet, sown May 27th, 3 feet by 2 feet in lines; single seeds; produce, at the rate of 9½ tons per acre. Light soil.

Corn, Large Yellow, sown May 27th, 3 feet square, apart, in hills, 3 seeds; produce, at the rate of 12½ tons per acre. Light soil.

Corn, Tuscarora, sown May 27th, 3 feet by 2 feet, in lines, single seeds; produce, at the rate of 11 tons per acre. Sandy soil.

Cabbages, Red Dutch, planted June 17th, 2½ feet square apart; produce, at the rate of 23 tons per acre. Light soil, mixed with black deposit.

Cabbages, Bergen, planted June 17th, 3 feet square apart; produce, at the rate of 29½ tons per acre. Soil same as last.

Cabbages, St. Dennis, planted June 17th, 3 feet apart each way; produce, at the rate of 42 tons per acre. Soil, light black and sand.

Cabbages, Flat Dutch, planted June 17th, 3 feet square apart; produce, at the rate of 20 tons per acre. Soil, sand and black deposit.

Cabbages, Savoy, planted June 17th, 3 feet square apart; produce, at the rate of 29 tons per acre. Soil, black deposit and sand.

Potatoes, Early Ash Leaved Kidney, planted May 9th, 3 feet square apart in hills, 3 seeds; produce, at the rate of 144 bushels per acre.—Soil, very light.

Potatoes, Mechanics, planted May 10th, in lines 2½ feet apart; single sets 1 foot apart in the line; produce, at the rate of 260 bushels per acre. Soil, light sand.

Potatoes, Early June's, planted May 9th, 3 feet square apart, in hills, 3 seeds; produce, at the rate of 184 bushels per acre. Soil light.

Potatoes, Flat Pink Eyes, planted May 12th, in lines 2½ feet apart, single sets 1 foot apart in the line; produce, at the rate of 380 bushels per acre. Sandy soil.

Potatoes, Irish Cups, planted May 12th, in lines 2½ feet apart, single sets 1 foot apart in the line; produce at the rate of 410 bushels per acre. Light soil.

Potatoes, Round Pink Eyes, planted May 13th, in lines 2 feet apart, single sets 1 foot apart in the line; produce, at the rate of 300 bushels per acre. Sandy soil.

Potatoes, Early Regents, planted May 9th, in lines 2½ feet apart, single sets 1 foot 3 inches apart in line; produce, at the rate of 304 bushels per acre. Light soil.

Carrot, Early Dutch, Horn, sown May 7th, in lines 2 feet apart, thinned to 5 inches in line; weight of produce, at the rate of 31½ tons per acre. Sandy soil.

Carrot, Altingham, sown May 7th, in lines 2½ feet apart; thinned to six inches in line; weight of produce, at the rate of 36 tons per acre.—Light soil.

Carrots, White Field, sown May 7th, in lines 3 feet apart, thinned to 8 inches in the line; weight of produce, at the rate of 43½ tons per acre. Light soil.

Blood Beet, sown May 7th, in lines 3½ feet apart, thinned to 8 inches, in lines; produce, at the

rate of 42½ tons per acre. Soil, light sand and black deposit.

Mangel Wurzel, sown May 7th, lines 3 feet apart, thinned to 9 inches in lines; produce, at the rate of 55 tons per acre. Soil, light mixed with deposit.

Sugar Beet, sown May 7th, in lines 2½ feet apart, thinned to 9 inches in line; produce, at the rate of 28½ tons per acre. Soil, light, mixed with deposit.

Dutch Parsnip, sown May 7th, lines 2½ feet apart, thinned to 7 inches in line; produce, at the rate of 20 tons per acre. Soil sandy..

Nutmeg Melon, sown May 10th, in open air, about from 10 to 12 fruit to each plant; average weight of fruit, 6 lbs.

Citron Gourd, a promiscuous plant in a border, which produced 104 fruit of the finest I ever saw; weight of the whole, 754 lbs. on a single plant.

Double Husk Indian Corn, grows most luxuriantly, and bears an ordinary crop of ears, adapted for cold, late districts, as it comes from the mountain country.

Indian Corn, Hybrid of the same, with a common yellow corn. Seeds much larger, and in every way improved, yet retaining enough of the husk for protection.

The most general observation to be noticed in the foregoing details is, that, almost in every instance, thin sowing and wide planting produced the greatest quantity and the best samples of all the crops, and when there is good cultivation, that principle may be carried out in almost every instance with success, as it allows the soil to be more freely stirred and cultivated, which cannot be overdone, in that it acts in the same manner as rubbing or brushing does to some people who do not take much exercise.

The above I certify to be as nearly correct as calculation and the size of the portions cultivated will admit.

And I remain, Sir, with respect,  
Your most obedient servant,

WILLIAM MUNDIE,  
*Superintendent of the Normal School Grounds.*  
Toronto, October 24th, 1853.

#### LOWER CANADA AGRICULTURAL EXHIBITION.

The great event of the month has been the Provincial Exhibition, which opened, as announced, on Tuesday, the 27th of September, in the City of Montreal, and continued over the three succeeding days, and indeed partially on Saturday.

The Exhibition was not restricted to agricultural produce and implements, but included works of art, and *vertu*, and manufactures of every kind. The latter we shall lightly pass over, as they do not properly belong to the farming department.

The Exhibition was held on the slope of the mountain, to the north of the city. The ground is tolerably well drained, but the torrents of rain speedily converted the whole surface into mud. The only fine day was Thursday, when from fifteen to twenty thousand persons were present.

We shall spare our readers the detail of soirees, bails, and torch-light processions, which have no connection with agriculture, and, in our opinion, divert public attention from more useful matters.

The awards of the Judges speak for themselves; and the notices of the daily prints, from which we extract largely.

The Committee, seeing the broken state of the weather, took a very wise precaution in providing very ample and solid shelter both for man and beast; and everything which did not appear water-tight, as all temporary erections will do occasionally, was instantly closed up. But for this, the failure would have been complete, and the ground in fact untenable.

The arrangements included ample refreshment rooms, with private apartments for the judges, whose task was a sufficiently arduous one, and extensive series of stalls well supplied with fodder for the animals exhibited. In these respects it contrasted very favorably with the display last year at Toronto, where, if they had had such an unusual infliction of unfavorable weather as we have had, and continue to have to this moment, the whole exhibition would have been broken up.

On the right hand on entering, the principal object of attraction was the pigs, in which the French Canadians seemed to take particular interest. This is the most valuable subject for farmers on a small scale, as it is always certain to find a market, either for home consumption or for curing. The favorite breeds appeared to be the Berkshire, mixed, more or less, with the Chinese, and with the large breed of the North of England. We saw nothing thorough-bred but the Berkshire. There were some very large animals, but we greatly doubt that size is an element either of excellence in the article, or of profit to the farmer, and the same remark applies to all the domestic animals. The important thing is to get flesh and fat instead of bone and skin.

The next department was that of sheep, and some very good specimens were shown. In that we could have wished that there were some of what are called "grade" sheep. It must be admitted that Lower Canada contains very few sheep of the improved breeds. We scarcely think that the Merino, of which there were two or three specimens, can ever be raised in this climate to profit. The Southdown, Leicester, and other heavy breeds, of which we have, particularly in the vicinity of Montreal, some very fine stocks, imported at great expense, bring very high prices when fattened in the winter, but we have heard experienced farmers express doubts that they were remunerative. The general character of the sheep in Lower Canada is as bad as can be, both as respects carcase and wool. They are much about the same as they were a few years ago in New-England, when you might take the fore-quarters of a sheep to use as a lantern. They may be very much improved by crossing, and our own opinion is that the Cheviot would be the best cross for practical purposes; that is, to make the most money out of a given quantity of food, which, after all, is the end of all farming.

In the horned cattle department, the prevailing breeds were the Ayrshire, the Devon, and the Durham Short Horns and their mixtures. We believe it is generally admitted that mixed breeds are the best for general use, but still it is highly desirable to have pure-bred animals of the best breeds in order to make the mixture.

In the horse department were several very fine specimens, which we do not allude to individually, not wishing to interfere with the department of the judges. We regretted to see so few specimens of the old Norman or Breton horse, the native Canadian, which is almost, if not altogether, identical with the "Suffolk Punch." The best of the breed seem to have been exported. The breed we have now is crossed with a heavier animal, perhaps better fitted for the coach and the plough, and for the hunting field.

In the vegetable department there were specimens of enormous pumpkins, the utility of which we cannot understand; a great many highly respectable carrots and parsnips; some Indian corn; very fine specimens of wheat and oats. The Horticulturists sent, among other things, many varieties of apples, and some specimens of grapes and plums, but these are more interesting to the wealthy amateur than to the working farmers.

The best department in the whole collection was that of the poultry. There never was anything before like it in this Province. The show of the Shanghaes and Cochins-Chinese was particularly fine. Extensive contributions came both from the Upper Province and the United States. The arrangements for the food and comfort of the birds showed great skill and attention.

The agricultural implement department was not very extensive. There were a great many very useful instruments exhibited, but more remarkable for utility than novelty.

As for fire-engines, and crotchet work, and the fine arts, we have nothing to do with them.—*Farmer's Journal.*

#### ANNUAL FAIR OF THE STATE OF NEW YORK

The Annual Exhibition of the Society was held at Saratogo Springs, from the 20th to the 23rd of September. Owing to the very stormy weather which commenced a week previous to the Fair, and continued almost without intermission until the opening day of the Exhibition, the attendance was not as large as usual. Notwithstanding, however, the disadvantages attendant upon the Exhibition, some of the departments have never been equalled, and show most satisfactorily the strong hold these exhibitions for improvement have upon the farmers and mechanics of our State. The show of cattle, horses, swine and sheep were of unusual excellence, and the superior character of much of the stock, elicited much approbation from all in attendance. The fruits were of a character, it is believed, never equalled; and the enterprising and successful exhibitors from Rochester, Geneva, Cayuga, Syracuse, Troy, &c., are entitled to the most hearty thanks of all interested in this most important department. The show in the mechanical and domestic departments was quite limited, mainly owing to the



continued rain, which prevented people from the country bringing their articles in time for entry; and unusual delays upon the railroads, also detained many articles from reaching Saratoga in time for exhibition. The number of cattle, horses, sheep and swine on exhibition was 1161; and of poultry, 337. Entries of grain, implements, domestic manufactures, &c., 217; stoves, hardware, &c., &c., entries 117; receipts, \$6,209.

On Thursday evening, a most instructive lecture on flax, its properties and uses, &c., was delivered by Professor John Wilson, F.R.S.E., of England, and a copy of it was requested for publication, on motion of J. P. Beckman, and will be published in the Transactions of the Society.

On Friday, the last day of the Exhibition, the Society was called together on the Show Grounds. Lewis G. Morris, President, in the chair. Mr. Morris, after some very appropriate remarks, introduced the Hon. Wm. Rives, of Virginia, who delivered one of the ablest addresses ever given before the Society. It was listened to with unbroken interest, by a very large and intelligent audience. On motion of John A. King, the thanks of the Society were most cordially tendered to Mr. Rives for his very able, practical address, and a copy of the same was solicited for publication in the Transactions of the Society. His Excellency Governor Seymour was present during the address; and Justice Wayne, of the United States Court, General Wool, Professor John Wilson, Hon. Adam Fergusson, U. C., C. B. Calvert, President Maryland Agricultural Society, Gen. Tench Tilghman, of Maryland, and many other strangers of distinction, were also present.

After the address the premiums were announced by the Secretary, and the Society adjourned.

The grounds were admirably selected and arranged; and, notwithstanding the severe rains preceding and during the Fair, the grounds were dry and no inconvenience was experienced within the enclosure. The covering for stock was fully carried out by the citizens of Saratoga, and secured the warm approbation of exhibitors.—*Journal of the N. Y. State Agricultural Society.*

#### GREAT SALE OF EARL DUCIE'S STOCK, ENGLAND.

The sale of this celebrated herd of Short Horns, admitted to have been the best in the world, came off on the 24th of August. The sale was conducted by H. Strafford, Esq., the most distinguished cattle auctioneer in England. The attendance at the sale was very numerous, and "never, perhaps," says the *Mark Lane Express*, "were there so many eminent breeders, of all kinds of stock assembled together." "The Short Horn men themselves, if not all to buy; anxious to see how the famed 'Duchess' tribes fared in their new home, and watching—maybe with somewhat of a jealous eye, what the determination of this noble Lord had really accomplished. Never could a verdict be recorded as less one sided." The Booths of Warlaby, Tors of Aylesby, Sir Charles Knightly, Lord Feversham, the Tanquerays, Townleys, Jonas Webb, and others, breeders of this fashionable stock, and a host of others, with several American gentlemen, were present examining, and many of them purchasing finally at the sale.

"The Short Horns were allowed to be in the acme of breeding condition. They had all, both old and young, what the Yorkshiremen call the 'bloody look,' so peculiar to the well bred Short Horn, as manifest, indeed, in the pure bred cow as in the thorough bred horse, and warranting the long and high pedigrees of which each one could boast."

The Short Horn herd, consisting of sixty-two lots, realized close upon £10,000 (nearly \$50,000), making an average of £150 each animal. The names of the purchasers are given in the English journals, in which it is said, "among the purchasers will be found several American gentlemen, who added, unquestionably, to the success of the sale, by the spirit with which they opposed, and generally tired out many of the home buyers."

The "Duchess" tribe stood of course the highest. A roan heifer (Duchess 66), rising three years old, was bought for Col. Morris, President of the Agricultural Society of New York, for 700 guineas; and a calf of this heifer, six weeks old, brought 310 guineas; a heifer and calf thus making 1,010 guineas—upwards of \$5,000. Such prices as these are without parallel in the English sales of Short Horn cattle.

We give below the purchases at this extraordinary sale on American account, so far as the list furnished us gives them. It will be seen that four of the Duchess tribe of cows, comprising the very best animals sold, come to this country, and two of the very best bulls. We shall not be disappointed to hear, ere long, that English breeders are sending their orpers to America, to replenish their stock out of our superior animals. We do not doubt that we have, at this time, in this country, some herds that (now Earl Ducie's herd is sold) are superior to any single herd in England.

#### THE SALES.

##### COWS AND HEIFERS.

Duchess (66), rich roan, calved Oct. 25, 1850 got by 4th Duke of York (10,167), dam, Duchess (55th), by 4th Duke of Northumberland (3,649); 700 guineas; Lewis G. Morris and Noel J. Becar, New York.

Duchess (64), red, calved August 10, 1849; got by 2d Duke of Oxford (9,046), dam, Duchess 55th, (as above); 600 guineas; Jonathan Thorne, Washington Hollow, Duchess county, N. Y.

Duchess (59), roan, calved November 21, 1847; got by 2d Duke of Oxford, dam, Duchess (56); by 2d Duke of Northumberland (3,646); 350 guineas; Jonathan Thorne, N. Y.

Duchess (68), red, calved Sept. 13, 1852; got by Duke of Glo'ster (11,382), dam, Duchess (63); above 300 guineas; Jonathan Thorne, N. Y.

##### BULLS.

Duke of Glo'ster (11,382), red, calved Sept. 14 1850; got by Grand Duke (10,284), dam, Duchess (59), by 2d Duke of Oxford (9,046); 650 guineas; L. G. Morris and N. J. Becar, N. Y., and W. Tanqueray.

Fourth Duke of York (10,167), roan, calved December 22, 1847; got by 2d Duke of Oxford, as above, dam, Duchess (51), by Cleveland Lad (3,407); 500 guineas; General Cadwallader, Philadelphia, and George Vail, Troy, N. Y.


Next to the "Duchess" tribe the "Oxford" tribe brought very high prices, ranging from 250 to 180 guineas. In addition to the American purchasers of "Duchess" animals, there were sold to English gentlemen at 400, 350 and 310 guineas.

Mr. Thorne also bought, for 1,000 guineas, at private sale, "Grand Duke," the sire of Duke of Glo'ster, one of the most celebrated bulls in England, from another herd.

Mr. Tanqueray has done himself great credit by his liberal course towards gentlemen from this country. He has allowed Messrs. Morris and Becar to select choice animals from his own herd, and after using the celebrated Bates bull "Balco" for one season, has disposed of him to them, and he is now in this country. He also united with them in the purchase of the "Duke of Glo'ster," the prize of Earl Ducie's breeding, which secures him to our country. Such liberality as this is duly appreciated, and will meet a merited reward.

Mr. Strafford also, the editor of "Coates's Herd Book," has given his time and services to American gentlemen, enabling them to avail themselves of his judgement and information in the selection of stock.

The result of these gentlemen's efforts are to be seen in our country, and will add much to the superior character of our stock,—*Journal of the N. Y. State Agricultural Society.*

 We owe our subscribers an apology for the poor quality of paper we have been obliged to use for the last two numbers of the *Agriculturist*, the parties that supply us being unable to furnish any other, on account of the scarcity of water.

## The Agriculturist.

TORONTO, NOVEMBER, 1853.


UNIVERSITY COLLEGE, TORONTO.

The four new Chairs established in this important national Institution are now filled by able and accomplished Professors, who are already engaged in the active prosecution of their respective duties. Dr. Daniel Wilson, from Edinburgh, takes History and English Literature; Mr. Hincks, late Professor in Queen's College, Cork, Natural History; Mr. Chapman, recently, Professor in University College, London, Geology and Mineralogy; and Dr. Forneri, Modern Languages. The inaugural discourses neatly delivered by these gentlemen to large and delighted audiences, were of a character to justify the highest expectations of the public in regard to the interest and value of their professional services. Well might the

learned President, in his very appropriate and eloquent opening address, congratulate the college and the country on this highly valuable addition to the professional staff.

We hope soon to see a large number of young men engaged in, or intended for agricultural pursuits, from all parts of the country, availing themselves of the important advantages now offered by University College. Only a single winter's attendance on the courses of scientific and practical Agriculture, Chemistry, Geology, Botany and other branches of Natural History, would be of unspeakable advantage to them. It is only by cultivating his mind that the young farmer can learn to cultivate his soil in the best and most economical manner. Our young farmers might avail themselves of Professor Wilson's course with great benefit, as well as other branches of literature taught in this institution. Whatever misgivings or prejudices may be felt or expressed by certain parties, we hold it to be an indisputable truth, that our farmers as individuals, or as a body, will never become intelligent and progressive, even as mere cultivators of the soil, and attain to their proper social standing in society, till they partake equally with all other classes, of the benefits of a sound and comprehensive education. University College, from the small amount of fees required, and the comprehensive course of study embraced in its curriculum, thus adapting itself to the advancing spirit of the age is admirably calculated to meet the wants of the community.

It is gratifying to be assured that the high standard of scholarship which has characterised this institution under previous forms of its existence, will in no degree be lowered by embracing the natural and experimental sciences. We intend to consider this subject more in detail at a future opportunity, particularly in reference to the wants and improvement of the Agricultural Classes.

 The most reliable accounts from Europe show a deficiency in Breadstuffs to a very considerable extent. The price of food therefore, is likely to rule high next year. The Canadian Farmer should make preparation accordingly. Grow as much and be ready to sell as much as possible.



ADDRESS

*Delivered at the Annual Exhibition of the Ellisburgh, Adams and Henderson Agricultural Society, New York, Sept. 9th, 1853,*

BY CAPTAIN A. CAMERON, OF KINGSTON.

[We have much pleasure in laying before our readers this excellent Address, particularly as it was delivered before an American Society, by one of our most zealous and intelligent Canadian agriculturists. May so beneficent an example find many imitators in both countries.—*Ed. Ag.]*

Improvement in the knowledge and practice of agriculture, the object of this and all similar societies, although receiving much laborious attention from all civilized nations and intelligent classes of men, from earliest ages to the present day, appears, by opinions very generally expressed, to have, as yet, made but moderate progress, compared with the general advancement in science, and the improvements in many of the useful arts of life.

To trace the cause, would be an investigation both curious and useful; for although our first parent Adam, and his two first-born sons, Cain and Abel, were engaged in gardening, tilling the soil, and in the keeping of sheep, occupations the best calculated to afford to themselves and their progeny both food and clothing, by the sweat of their brow, we find at this period, so remote from their day, innumerable tribes of their descendants wandering over soils the most fertile, in a state of hunger and nakedness, despising the sources of comfort and happiness to which God so early directed man's energies, giving preference to the uncertainties of the chase, and consequent privations and miseries,—not unfrequently, like Cain, "rising up against their brethren," slaying, and as cannibals, devouring them, for want of other food. Before the white man had begun to people this continent, the poor Indians may not have had any opportunity of acquiring the art of raising for themselves the necessaries of life from the soil, and may therefore often have been driven from one pitiful necessity to another, still more horrifying, as detailed by Hulman and others, but having now, for centuries back, had the benefit of both precept and example in farming set before them, they may be said to exhibit, in an extreme degree, the utmost indifference, if not aversion, to the operations of husbandry. We know that "the earth is the Lord's, and the fulness thereof;" that it is manifestly his design it should be cultivated for the sustenance of man, to whom he has given dominion over it; that, from the general tenor of his word, we are enjoined to be industrious. In the parable, it was the mildest portion of the sentence upon him, who did not properly apply his one talent, to "take therefore the talent from him, and give it unto him which hath ten talents;" and so, without presuming to judge harshly of our brother, the "red man of the forest," we may believe that it is the will of the Great Ruler of all, that this great and fertile region should no longer continue to be the monopoly of that "idleness which

clothed a man with rags;"—no longer the birth-right of a people "whose sloth killeth them, for their hands refuse to labor." We are sometimes entertained with effusions of affected philanthropy, deprecating the taking of part of their hunting-grounds from the aborigines, and this, too, when millions of their fellow-men would be rendered the happier by the possession of only one acre each, whereon to raise their bread. But the tide of emigration, of industrial, of agricultural, educational, and general improvement, has set in so strongly on this continent, as ere long to cover the land, and to render the portion of the sluggard therein comparatively small. The error of the untutored Indian, in not cropping the soil for his sustenance, is clearly perceptible to us. Could we as clearly understand our own mismanagement of the earth in over-cropping, without fertilization, we no doubt would make immediate and eager exertions for improvement, a conviction for its necessity being generally a preliminary thereto. The Indian, it appears, considers agricultural operations unremunerative to him. We often conduct them so indifferently, as, in a few years, to render them so to us; were this not the case, could we find in our neighborhood a Province containing a population of nearly a million, whose annual average production of wheat per acre, by their own sowing, is but 7 1-5 bushels; while some of them boast of having taken forty successive crops off the same field, without using any means whatever to sustain its fertility. And when it is known that much of the soil in the same part of the country, unexhausted, produces over four times the former quantity; with this warning before us from Lower Canada, we had better impartially examine whether the practice we are pursuing is not insensibly leading towards similar results. Coming nearer home on this subject, we have received a more direct warning, and that from a source which tends to give it a weight and importance sufficient to demand our attention.

PROFESSOR JOHNSTON, who travelled in this country in the year 1849, in speaking of North America, says:—"As to the condition of agriculture, as an art of life, it cannot be denied that in this region, as a whole, it is in a very primitive condition. In relation to English markets, therefore, and the prospects and profits of the British farmer, my persuasion is, that year by year, our transatlantic cousins will become less and less able, except in extraordinary seasons, to send large supplies of wheat to our island ports; and that when the virgin freshness shall have been rubbed off their new lands, they will be unable, *with their present knowledge and methods*, to send wheat to the British market so cheap as the more skilful farmers of Great Britain and Ireland can do." If any one, less familiar with practical agriculture, doubts that such must be the final effect of the exhausting system now followed on all the lands of North America, I need only inform him that the celebrated Lothian farmers, in the immediate neighborhood of Edinburgh, who carry all their crops off the land, as the North American farmers now do, return, on

an average, ten tons of well-rotted manure every year to each acre, while the American farmer returns nothing."

Granting this to be a true statement of the present practice and future prospects of the farmers of this country, the question naturally arises to our minds, what is our best remedy to counteract as early and as effectually as possible, the evil. Even supposing the case to be rather highly coloured by the Professor, which is doubtful, there is ample room for improvement, and there is no danger of our overdoing in that direction.—We perceive in this quotation, that those celebrated farmers mentioned, who have heavy rents and taxes to pay, are in the habit of keeping up the condition of their land by the application of 10 tons of manure per acre annually—mismanagement on their part would soon involve them in ruin—attentive to their business, and determined on success, if at all attainable, they may safely get credit for having done all in their power to find out a cheap and easier practice. Their peculiar position near a large city enables them to procure manure in large quantities; near large cities in this country the same could be done, and is done by many, although not to the extent it ought to be. It is worthy of notice here that Professor Johnston, although of high standing in the great school of agricultural chemistry, approvingly points out the good old custom of manuring heavily, and that he has not informed the world that in his native country the light artificial fertilizers produced by the application of chemistry have done much for agriculture, although he is an advocate for their adoption.—What is the best remedy against the exhausting system of agriculture, prevalent in many parts of this continent? is a question of great national, as well as of individual importance especially to every farmer, and no doubt is a question often occurring to his mind. Many affect to know this remedy and favor the public with their opinions on paper; few give practical illustrations of their theory on the land. It is evident that when any improvement proposed for adoption, is so beset with difficulties in the execution, as to be beyond the reach of the majority of the practical farmers, it is not likely to make much progress; and however abundant in promise and in the flowers of rhetoric, until made easy of comprehension, and convenient of application, it is not destined to yield much fruit. As to simplicity and practicability, perhaps nothing can excel the remedy recommended in the "Country Gentleman," dated "Albany, N. Y., July 8, 1853:—"to save time, part only of the article is quoted, that part, however, contains the desideratum, as follows:

"Manuring, for example, is a most powerful means for improvement; but both manures and their application, are expensive in proportion to the amount applied. Underdraining has wrought wonderful results, but the cost is always a large item, and the same may be said in some degree, of deep ploughing and sub-soiling. But in the arrangement of a rotation, no additional expenditure or labor is necessary; it costs no more to cultivate crops which are made to succeed each

other judiciously, than to cultivate those arranged in the worst manner possible. The farmer may triple the successful results of the latter; not by the expenditure of five hundred days of drawing manure, or five hundred dollars worth of ditching; but simply by making a proper use of one's brains." The article then concludes as follows:—"alluding to a farm on which the author had witnessed the rotation system carried into practice: "The culture of each successive crop constantly tended to the destruction of some weeds injurious to another, and thus all were destroyed in their respective turns, while at the same time, the fertility of the land was increased, and each crop fed with its own proper nutriment as its turn comes round."

Let us observe in this case; the fertility of the soil was increased by rotation of crops alone, without the aid of any fertilizer applied. Could we believe that this easily applied remedy would be efficacious generally all over the country, surely none of us would long hesitate as to its application. It seems that the celebrated Lothian farmers alluded to by Professor Johnston, are not of the same opinion as the writer in "The Country Gentleman," as they drain extensively, and regularly carry into effect the rotation system, at the same time they apply the ten tons of manure per acre yearly; this, however, may be owing to their ignorance; if equally profitable, there would hardly be two different opinions in a country, as to which of these two methods of fertilizing should have preference: the one is certainly a more *gentlemanly-looking* practice than the other.

In case that, after more fully perusing this excellent article, in the popular periodical above mentioned, some farmers should be of opinion, that the question, "which is the best remedy against the evil of exhausting our lands?" is not yet answered, it may not be out of place to state that the principle of farming on which the far-famed "Jethro Tull" proceeded, has recently been again brought under the notice of the public, with modifications in the practice; and is well explained in the eleventh edition of a well written pamphlet, styled "word in season, or how to grow wheat with profit." The author of this comes forward with the strongest of all recommendations, which is—that for several years he has been successful in the practice of the theory he recommends. Jethro Tull, too, in accordance with the above quotation, asserted that manure was not indispensable in good farming; professing that by a peculiar management of the soil, a sufficient and endless supply of nourishment for wheat crops might be derived from the atmosphere, chiefly by the thorough pulverization of the soil. The author of the pamphlet, says—"The process by which I carry out my plan is a very simple one, and is given in detail, and at length in the following pages. Briefly, it is this; I divide my fields into lands five feet wide; in the centre of each land, I drop or drill my seed in triple rows one foot apart, thus leaving a fallow interval of three feet between each triple row. When the plant is up, I trench the intervals with the fork, easily taking my spits about three inches from the wheat, and at spring



and during summer I clean them with the blades of the sharp cutting horse-hoe, and keep them open with the tines of the scuffle. Every year, in short, I trench and cultivate  $2\frac{1}{2}$  out of the 5 for the succeeding crop, and leave the other  $2\frac{1}{2}$  for that which is growing.

"One moiety of each acre is thus in wheat and the other moiety fallow; and the average yield of that half acre, is 34 bushels, grown without difficulty or danger in the execution, and surpassing the average yield of a whole acre on the common plan. I differ from Tull in this, I do not refuse manure. The essence of the scheme I propose is, not that it dispenses with manure, but that with manure where required, it enables the farmer to draw from half an acre of land, a produce beyond his now average produce from a whole acre."

This pamphlet well deserves a place in every farmers library, but in case it should appear to some, not yet to have answered the question, even with the aid of the rotation system; let us lay beside them both a short statement of what the school of agricultural chemistry announce with confidence as the remedy required. For this purpose the following quotation is from a volume of 138 pages, bound up with "a treatise on the nature and value of manure and on agricultural chemistry, &c, by F. Falkner." The volume itself is styled "Productive farming, or a familiar digest on the recent discoveries of Liebig, Johnson, Davy and others, showing how the results of tillage might be greatly augmented, by Joseph A. Smith." Without adverting to the author's more recondite arguments, which no doubt he has carried out logically, he thus concludes, "Let us suppose that a close examination has taken place of the materials of which a soil is composed, and that an artificial, saline or mineral compost is judiciously and accurately put together, either to meet the deficiency, or added to a tolerably good soil, to increase its fertility, the advantages of its use are not overstated in a recent pamphlet."

"1st. It is cheap compared with its value, a twenty-shilling cask will supply an acre. 2nd. It is light and easily carried, when compared with carting manures. 3rd. It is suitable for small holders, who cannot afford soiling or keeping of cattle, for making dung-heaps. 4th. It enables a tenant-at-will to take a good crop out of done-out land, if his landlord refuses to renew. 5th. It furnishes to barren land such food for plants as had been deficient; such defects of one or more substances being, in general, the cause of sterility. 6th. It enables the cultivator to extract ten times as much vegetable aliment for his plants from the soil, and from other manure, as they could otherwise in most cases yield." He adds, he "believes there are no soils which may not be permanently fertilized by the mineral compost which forms his invention. But bearing in mind the remarks we have already made, every practical farmer must advance upon his own responsibility in making a trial of its capabilities. The object of this work being, not the introduction of advertised artificial manures to the notice of the agricultural world, but

the dissemination of those sound and rational views of the necessary relations, between *Practical Farming* and *Practical Science*, without which agriculture must still lag behind the age; and, though the first and most important of all arts, remain forever stationary."

Now, unfortunately for Joseph A. Smith, as a prophet, the art of agriculture has not remained stationary, since he, ten years ago, announced to the world the efficacy of a twenty-shilling cask of his favorite compost, although what he calls "sound and rational views of the necessary relations between practical farming and practical science," remain yet an almost untried theory.

It being a system requiring a considerable knowledge of chemistry in practice, the chemists and its advocates are the fittest proof of its real utility,—not in flower-pots and green-houses, but on the broad acres of an exhausted farm, not for one year only, but for a sufficient length of time to prove the durability of its fertilizing effects.—If, to the honor of its discoverers and advocates, and the benefit of agriculturists, as well as of mankind in general, this new system of fertilization should bear the test, no people in the world would sooner do it ample justice than the enlightened and enterprising people of this great Union. This ephemeral, as it may be called, of *permanently* fertilizing our land at twenty shillings an acre has now so long been hovering around the agricultural community, that although it comes in such a questionable shape, it is full time to grapple with it. We are surely not afraid of it; while it remains a phantom at a distance we need not be; but let us begin to deal with it in close quarters, and it may very easily, in many cases, turn out to be a robber. It would be absurd to suppose that the farmer is to turn chemist, to have a laboratory, and the necessary apparatus, to analyze, first the several kinds of grain or other produce, which he may intend to sow or plant; so that he may accurately know the constituent parts of each,—analyze the several soils of his fields, and that he should in characteristic hieroglyphics send to the druggists his order for the several ingredients necessary, so as to make sure he has got the very exact composition required. The attempt would be a complete burlesque on both science and farming. How then, is this practical farming and practical science to be brought into operation with one another? Perhaps there might be a county or township chemist or analyzer, sworn into office, to perform these services for a fixed and moderate remuneration, and the demand for the ingredients would soon create the supply. But although there are many ways in which it is possible to carry out the plan, no feasible one has yet been suggested to enable the farmer thus by process of analyzation to ascertain what he requires, nor is it likely these artificial fertilizers will ever come into general use, without the powerful aid of the government and legislature. Even suppose a chemist to settle in every county, on his own responsibility, to make a business of analyzing for farmers, and selling to them the compound supposed to be required; the system would be liable to great abuse, and farmers would be subject to the imposition of quackery, so gross

as to destroy all confidence. If the agriculturists in this country would but first test this proposed fertilizer, then finding it efficacious, would unite in an appeal to the government, to establish persons and places, at convenient distances throughout the rural districts, for its sale, there may be a probability their appeal would succeed.

In Canada, the government and legislature have established so many important and expensive offices connected with agriculture, that the farmers there have good reason to expect their interests in all respects to receive a full share of attention. The offices are that of Minister of Agriculture, with several clerks, of a Provincial Geologist, of a Professor of Chemistry and Natural Philosophy, and a Professor of Agriculture; besides a Board of Agriculture, and a Provincial Agricultural Association. Now as this question of artificial manures is one thrust upon the farmers, by the scientific world, and as farmers are often severely reflected upon, as being without a knowledge of their profession, and without enterprise, it is not unreasonable that the farmers of Canada should look with confidence to this array of scientific and practical appointments, to facilitate, so far as possible, the general application of this discovery, said to be capable of producing such highly valuable results. The same Prof. Johnson, already quoted, when in this country, in 1849, discovered that in Northern New York, large quantities of the phosphate of lime are to be found, as also amongst the Thousand Islands and on the Ottawa River, which he states is a highly valuable fertilizer, that Dr. Emmons, of Albany, knew localities in Essex County, where a single man might excavate a ton a day of this mineral. That Mr. Alger, and Dr. Jackson, of Boston, found that large quantities of the same occurred at Hendersonville, in Morris County, even as much as would supply the English market for years, highly as it is appreciated there for agricultural purposes; that a shipment was made, soon after his visit here, to Liverpool, and readily sold there. Not knowing whether in the State of New York there are any public officers, whose duty it might be to follow such discoveries to some useful result for the good of the country, it may be as well to discontinue any further remarks as applied to this country, but in reference to Canada, it is not too much to say, when the country, nine-tenths of which are interested in agriculture, is at the expense of keeping so formidable a staff, as that enumerated, on pay, the people have a right to expect them to take a lead in noticing important questions of this kind, and in turning them to the best possible account for the good of the country.

That the Governments and people of North America would export this essence of fertility, without making any attempt to apply it at home, is hardly credible; perhaps ere this time it may in some places be in common use in this State, although it is not in Canada. The learned Professor, it appears, confidently expected it would soon be of general application, for he says:

"If we place more fertilizing manures within the reach of the farmer, it will keep down the rising price of guano, by the beneficial competition—will benefit practical agriculture, and increase the produce of the country.

"To the United States, the discovery will, in the meantime, afford a new article of export, new employment to a part of its people, and, I hope, a reasonable profit for their exertions, my friends, who have sought out the several localities. As soon as American farmers shall have satisfied themselves that, when prepared by means of sulphuric acid, it is really useful to their crops, the mineral will render the same service to their agriculture as to ours. It may revive the wheat-growing powers of New England, and enable Western New York to compete more profitably in the wheat market, with the new States of the north-west." Reverting again, and finally, to the question of the best means of fertilization, it is hoped that none of the foregoing remarks will be considered as presumptuously denying that judicious applications of chemical compounds to the soil may maintain and reproduce, when exhausted, its fertility; and even be applicable on a large scale to farming purposes. It is meant only that the authors of the system are in justice bound, practically to demonstrate its efficacy, before they charge farmers with want of knowledge and enterprise, in declining to practise what, to them, is surrounded with so many difficulties.

The foregoing remarks are intended to solicit the attention of this society to the maintaining and increasing of the fertility of the soil, which, together with the improvement of live stock, are very important considerations; the one very much depends on the other. The very best descriptions of cattle are liable to deterioration in the hands of the farmer, whose system produces a yearly exhaustion of his land, while the very best, as well as the most inferior, may be improved, and that profitably, in connection with the more generous practice of fertilization, and judicious care and crossing.

Such is the demand, indeed, that no branch of farming in the present day yields more remunerative returns, than the raising of first rate stock, whether horses, horned cattle, sheep, swine, or even poultry. To ensure success, however, great caution and skill in the points of excellence are required, and in this respect, from what stock has been exhibited here, it is evident that some members of this society are competent judges, both in Durhams, Ayrshires, Leicester and Merino sheep, and thus in this neighborhood the spirit of enterprise is not wanting.

Importations of stock of this description, not only benefit the individual owners, but they also benefit the neighborhood, by facilitating the work of improvement around them, in so many respects that it were waste of time to detail. Indeed it is not too much to say, that the importers are the benefactors of the public; as all the spare stock they can dispose of from the yearly increase fills up a want, and is the means of retaining at home money which, in the absence of such men, would be remitted to a foreign country, to supply the demand. The display of such stock is calculated to create a taste for improvement, especially in the minds of the youth of the country; it helps to render the occupation of the farmer more attractive and respectable, and thereby aids to reconcile the impatient and restless ambition of young men to its unavoidable disagreeables and labour



It is sometimes objected against the higher priced cattle, that they require more care than the inferior kinds. There is little force in this objection, because all cattle require shade and shelter, food and drink regularly, and the best cattle require no more. It is true that if a cow that cost \$200, is lost by want of care, it is a greater loss than that of one that cost \$25; but it is natural for men to take care of their better article in which they take pride, than that of the inferior; therefore the keeping of the valuable stock has a tendency to make farmers more careful and constant in attending to their business. This improvement is much wanted, as most farmers know more of their occupation, than they are attentive to in the practice.

All improvement in the knowledge and practice of farming is promoted by the well directed energies of agricultural societies. Their annual competitions are the means of conveniently congregating under one view, the farm implements, cattle and products in possession for competition and general information. And although some farmers decline, what they consider the sacrifice of time and a dollar cash to support them, as they receive no direct returns, this is a most unprofitable calculation for the mind that entertains it, and it is to be hoped will soon be renounced by every one who has the smallest idea of the beauties and advantages of a reciprocity of good fellowship with his neighbors.

The office bearers of these societies have very arduous duties to perform, and deserve the support and assistance of all classes in the community, and it is pleasing to see how much this is given to them in these flourishing and fertile townships, and to witness the interest taken by the ladies in the praiseworthy exertions of this society, in the dissemination of a spirit of general improvement.

The great variety of useful and ornamental articles of home manufactured woollens, needlework and painting produced at the exhibition yesterday, is highly creditable to them as samples of their industry and taste, and together with their own personal attendance, greatly enhanced the interesting display.

All who witnessed it must have admired the exhibition of yesterday, both as to the quantity and quality of the stock and the various articles exhibited in this beautiful grove; and the unanimity of good feeling which prevailed undisturbed by even one harsh expression, with the good natured jocularities of the competitors towards each other, formed altogether a complete picture of happiness; yet all this, without the daily exertions of the ladies at their homes, and their presence here, the most powerful incentive to order, sobriety and perseverance in all that is praiseworthy in the character of man, would be wanting.

With so successful a termination to this year's competition, it is to be hoped there will be no hesitation on the part of any farmer within its territorial limits to contribute his mite, and give his personal attendance to the next annual meeting. The society having the appointment of its managers, and the forming of such rules and re-

gulations as may appear most suitable to give general satisfaction, the just and equitable enforcement of these rules should form matter for universal approval and satisfaction, and as soon as they are found, in practice, to be unsuitable, should be changed or amended. Farmers should never forget that they are the bone and sinew of the nation; that, by being united, their power in the State, both morally and politically, would be irresistible.

In conclusion, may every one cultivate his soil so as to maintain and improve its fertility; may this society increase in members, and be fruitful in the work of improvement. Permit me to return thanks for your attention, and to apologize for presuming, even at your kind invitation, to attempt the performance of so honorable a task as you have this day assigned to me, and for which I feel so little qualified.

## Poetry.

### THE PARTITION OF THE EARTH.

TRANSLATED FROM SCHILLER.

"Here, take this world" cried Jove, from his high throne  
Addressing man; "the earthly sphere be thine;  
I grant it thee, a free perennial loan;  
Livide it—brother—feeling mark the line."

All hastened to establish each his claim.  
Busy both young and old assiduous strove;  
The farmer tried to seize the fields of grain,  
The noble's son in forest chase to rove.

What'er his warehouse holds, the merchant sweeps;  
The abbot chooses rare and costly wine;  
Kings barricade the bridges and the streets,  
With voice potential, cry: "The tenth is mine."

The spoil all meted out—alas! too late  
Arrives the poet for some distant place;  
"Ah! nothing left; how luckless is my fate!  
Each worldly chattel could its master trace.

"Woe's me! shall I alone of all be sent  
Upportioned from thee? I, thy truest son?"  
Thus ventured he his loud complaint to vent,  
And prostrate fell before the heavenly throne.

"If in the land of dreams thou didst dream,  
Pursued the god, 'bold mortal blame not me;  
Where wert thou on the world's division day?"  
The poet answered; "Lord, I was with thee!"

"Mine eye was dotting on thy godly sight,  
Mine ear on thy celestial harmony;  
Pardon that spirit, which, with thy rich light,  
Inebriate, forfeits all its chance, through thee."

What remedy is left? The world is given:  
Nor harvest, chase, nor commerce flows from me,  
Thou dost wish to breathe the air of heaven,  
As oft thou com'st, so oft shall welcome be.

### A RUSTIC PLAIN.

Since thou my dove, didst level thy wild wings  
To godlier shelter than my cabin makes,  
I work with heavy hands, as one who breaks  
The flax to spin a shroud of April rings.

With silvery showers—smiles light the face of May,  
The thistle's prickly leaves are lined with wool;  
And their gray tops of purple burs set full  
Quails through the stubble run. From day to day

Through these good seasons I have sadly mused,  
The very stars, thou knowest, sweet, for what,  
Draw their flames together, standing not  
About the mossy gables as they used.

No more I dread the winds, though ne'er so rough,  
Better the withered bole should prostrate lie;  
Only the ravens in its black limbs cry,  
And better birds will find green boughs enough.



### RURAL ARCHITECTURE.

We here present a farm house of the simplest and most unpretending kind, suitable for a farm of twenty, fifty, or an hundred acres. Buildings somewhat in this style are not unfrequently seen in the New England States, and in New York; and the plan is in fact suggested, although not copied, from some farm houses known there, with improvements and additions.

This house may be built either of stone, brick, or wood. The style is rather rustic than otherwise, and intended to be altogether plain, yet agreeable in outward appearance, and of quite convenient arrangement. The body of this house is  $40 \times 30$  feet on the ground, and 12 feet high, to the plates of the roof; the lower rooms nine feet high; the roof intended for a pitch of  $35^\circ$ —but, by an error in the drawing, made less—thus affording very tolerable chamber room in the roof story. The L, or rear projection, containing the wash-room and wood-house, juts out two feet from the side of the house to which it is attached, with posts  $7\frac{1}{2}$  feet high above the floor of the main house; the pitch of the roof being the same. Beyond this a building  $32 \times 24$  feet, with 10 feet posts, partitioned off into a swill-room, piggery, workshop, and wagon-house, and a like roof with the others. A light, rustic porch,  $12 \times 8$  feet, with lattice work, is placed on the front of the house, and another at the side door, over which vines, by way of drapery, may run; thus combining that sheltered, comfortable, and home-like expression so desirable in a rural dwelling. The chimney is carried out in three separate flues, sufficiently marked by the partitions above the roof. The windows are hooded, or sheltered, to protect them from the weather, and fitted with simple sliding sashes with  $7 \times 9$  or  $8 \times 10$  glass.

Outer blinds may be added, if required; but it is usually better to have these *inside*, as they are no ornament to the outside of the building, are liable to be driven back and forth by the wind, even if fastenings are used, and in any event are little better than a continual annoyance.

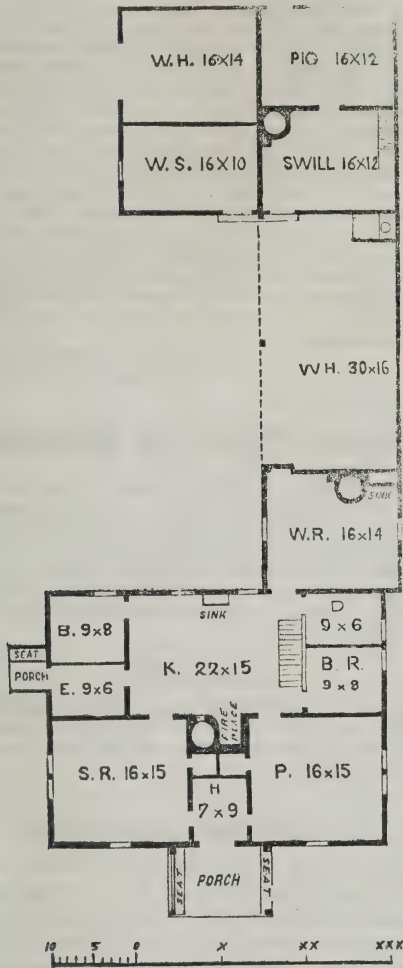
### INTERIOR ARRANGEMENT.

The front door, over which is a single sash light across, opens into a hall or entry  $9 \times 7$  feet, from which a door opens on either side into a sitting-room and parlor, each  $16 \times 15$  feet, lighted by a double, plain window, at the ends, and a single two-sash window in front. Between the entrance door and stove, are in each room a small pantry or closet for dishes, or otherwise, as may be required. The chimney stands in the centre of the house, with a separate flue for each front room, into which a thimble is inserted to receive the stovepipes by which they are warmed; and from the inner side of these rooms each has a door passing to the kitchen, or chief living room. This last apartment is  $22 \times 15$  feet, with a broad fire-place containing a crane, hooks, and trammel, if required, and a spacious family oven—affording those homely and primitive comforts still so dear to many of us who are not ready to concede that all the virtues of the present day are combined in a “perfection” cooking stove, and a “patent” heater; although there is a chance for these last, if they should be adopted into the peaceful atmosphere of this kitchen.

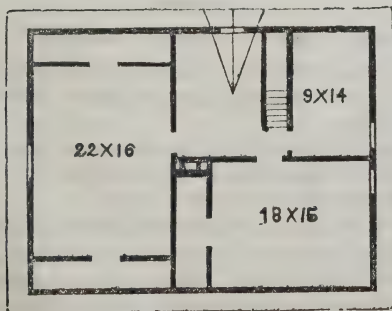
On one side of the kitchen, in rear of the stairs, is a bedroom,  $9 \times 8$  feet, with a window in one corner. Adjoining that, is a buttery, dairy-room, or closet,  $9 \times 6$  feet, also having a window. At the inner end of the stairway is the cellar passage; at the outer end is the chamber passage, landing above, in the highest part of the roof story. Opposite the chamber stairs is a door leading to the wash-room. Between the two windows, on the rear side of the kitchen, is a sink, with a waste pipe passing out through the wall. At the further corner a door opens into a



snug bedroom  $9 \times 8$  feet, lighted by a window in rear; and adjoining this is a side entry leading from the end door,  $9 \times 6$  feet in area; thus making every room in the house accessible at once from the kitchen, and giving the greatest possible convenience in both living and house-work.



GROUND PLAN.



CHAMBER PLAN.

The roof story is partitioned into convenient-sized bedrooms; the ceiling running down the pitch of the roof to within two feet of the floor, unless they are cut short by inner partitions, as they are in the largest chamber, to give closets. The open area in the centre, at the head of the stairs, is lighted by a small gable window inserted in the roof, at the rear, and serves as a lumber room; or, if necessary, a bed may occupy a part of it.

In rear of the main dwelling is a building  $44 \times 16$  feet, occupied as a wash-room and wood-house. The wash-room floor is let down eight inches below the kitchen, and is  $16 \times 14$  feet, in area, lighted by a window on each side, with a chimney, in which is set a boiler, and fireplace, if desired, and a sink in the corner adjoining. This room is  $7\frac{1}{2}$  feet in height. A door passes from this wash-room into the wood-house, which is  $20 \times 16$  feet, open in front, with a water-closet in the further corner.

The cellar is  $7\frac{1}{2}$  feet in height—and is the whole size of the house, laid with good stone wall, in lime mortar, with a flight of steps leading outside, in rear of the kitchen, and two or more sash-light windows at the ends. If not a loose, gravelly, or sandy soil, the cellar should be kept dry by a drain leading out on to lower ground.

The building beyond, and adjoining the wood-house, contains a swill-house  $16 \times 12$  feet, with a window in one end; a chimney and boiler in one corner, for swill barrels, grain, meal, potatoes, &c., for feeding the pigs, which are in the adjoining pen of the same size, with feeding trough, place for feeding, &c., and having a window in one end and a door in the rear, leading to a yard.

Adjoining these, in front, is a workshop and tool-house,  $16 \times 10$  feet, with a window at the end, and an entrance door near the wood house. In this is a joiner's work-bench, a chest of working tools, such as saw, hammer, augers, &c., &c., necessary for repairing implements, doing little rough jobs, or other wood work, &c., which every farmer ought to do for himself; and also storing his hoes, axes, shovels, hammers, and other small farm implements. In this room he will find abundant rainy-day employment in repairing his utensils of various kinds, making his beehives, hencecoops, &c., &c. Next to this is the wagon-house,  $16 \times 14$  feet, with broad doors at the end, and harness pegs around the walls.

The posts of this building are 10 feet high; the rooms eight feet high, and a low chamber overhead for storing lumber, grain, and other articles, as may be required. Altogether, these several apartments make a very complete and desirable accommodation to a man with the property and occupation for which it is intended.

On one side and adjoining the house, should be the garden, the clothes-yard, and the bee-house, which last should always stand in full sight, and facing the most frequented room—say the kitchen—that they can be seen daily during the swarming season, as those performing household duties may keep them in view.

By sympathy we make others' miseries our own: and so by relieving them, we at the same time relieve our ourselves also.

EDITOR'S NOTICES.

UNIVERSITY COLLEGE, TORONTO.

PROFESSOR BUCKLAND'S Course of Lectures on the HISTORY, THEORY, AND PRACTICE OF AGRICULTURE, will be delivered during the present winter. Fee for the course \$2. Particulars may be obtained by addressing Professor Buckland, Office of the Board of Agriculture, Toronto.

DEAN'S DOUBLE REFLECTOR.

The patentee of this useful invention is Mr. J. Dean, of Vienna, County of Elgin, Canada West, who was awarded a Prize for the same, at the late Provincial Exhibition at Hamilton. — We extract the following description from Mr. Dean's circular, for the information of such of our fair readers as are in the practice of baking their own bread: the price of the Reflector is, we understand, \$12.

It has been seen by several ladies and gentlemen, when in operation, and was highly admired and approved of by them, and pronounced a great improvement for Baking purposes—as it saves a great deal of labour and wood. It will contain from 50 to 60 good sized Biscuits, and bake them in eight minutes. The Inventor has often weighed and measured the wood, and found it to average as follows:—take a piece of dry maple wood, 6 inches long, about 4 to 5 inches square, weighing  $3\frac{1}{2}$  lbs., to bake the above, he has had 2 lbs. left, making  $1\frac{1}{2}$  to bake: so say 2 lbs., making allowance for different kinds of wood. It has baked 7 good-sized loaves of Bread with  $4\frac{1}{2}$  lbs. of wood, and other things in the baking line in the same proportion.

An advantage this Reflector has over a stove, is, there is no time lost in waiting for it to heat; for as soon as the fire is made you can bake. It can be placed anywhere (being very light,) and hardly any heat will be felt from it."

Has fortune frowned, my honest friend?

Don't hang your head so low;

This is no time to falter now,

Up! strike another blow!

Don't sit and groan and grunt and tell

What you have tried to do.

But place your shoulder to the wheel,

Strain nerve! and put her through.

ADVERTISEMENTS.

BUREAU OF AGRICULTURE,

QUEBEC, 30th September, 1853.

HIS EXCELLENCY THE ADMINISTRATOR OF THE GOVERNMENT has been pleased to *revoke* the appointment, notified in the *Official Gazette* of the 28th of May, last, of

Messrs. Whitman & Wheelock,

OF No. 100 FRONT STREET, NEW YORK,

As Agents for the receipt and bonding of Goods, or for the Payment of Duties on all such Goods as may be sent from Canada for the INDUSTRIAL EXHIBITION at NEW YORK, their services not being required.

Mr. ANTROBUS HOLWELL, Esq., Commissioner for Canada at the INDUSTRIAL EXHIBITION at New York, will take charge of all articles sent to the Exhibition from Canada.

ANDRE LEROY,  
NURSERYMAN, ANGIERS,  
FRANCE,

HONARARY AND CORRESPONDING MEMBER, &c., of all the principal Agricultural Societies of Europe and America, begs to inform his friends and the Public in general that he has just published his catalogue for 1853, which is the most complete one ever made. All the prices and required information for the importation of all kinds of Trees, Shrubs, Evergreens, Stocks, Roses, &c., &c., will be found in said Catalogue, which can be had free of charge on application to the undersigned, who will receive and forward all orders and attend to receiving and forwarding of the trees ordered, on arrival here. It is useless to add that Mr. LEROY possesses the largest NURSERY on the Continent. His experience in putting up orders for America, and the superior and reliable quality of all his trees, &c., is too well established, to require any further notice. Orders should in all cases be sent to the undersigned in the fall with information when the trees are to be forwarded.

E. BOSSANGE,

138 Pearl-st., New York.  
3m.

September, 1853.

Paige's Thrashing Machines.

FARMERS who desire to obtain a first rate Machine, which, with *less than half* the number of horses, and *half* the number of *hands* will thrash as much grain in a week, as one of the cumbersome eight horse-powers, should supply themselves with Paige's celebrated machine. Terms easy. For sale at the Office of the *Agriculturist*, Toronto.

August 3, 1853.

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WANTED,

A FEW DECEMBER Nos. of the "AGRICULTURIST" for 1852. Subscribers who can spare any of the above Nos. will be paid by sending them to this Office.

The Canadian Agriculturist,

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, to whom all communications are to be addressed, is published on the First of each month by the Proprietor, William McDougall at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

TERMS.

SINGLE COPIES—One Dollar per annum.

CLUBS, or Members of Agricultural Societies ordering 25 copies or upwards—*Half a Dollar each Copy.*

Subscriptions always *in advance*, and none taken but from the commencement of each year. The vols. for 1849-'50-'51, at 5s. each, bound.

N. B.—No advertisements inserted except those having an especial reference to agriculture. Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.



THE  
CANADIAN AGRICULTURIST,  
AND  
Transactions

OF THE  
BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. V.

TORONTO, DECEMBER, 1853.

NO. 12

MEETING OF THE BOARD OF AGRICULTURE.

The Board met at their rooms in this city, on Wednesday and Thursday, Nov. 9th and 10th. In consequence of the rough state of the weather there were only five members present on the first day, viz: Wm. Matthie, Esq., President of the Provincial Association; R. L. Denison, Esq., Treasurer; Hon. Adam Fergusson; John Harland, Esq., and Professor Buckland, Secretary. The President of the Board, E. W. Thomson, Esq., being from home, was prevented from attending the first day. He was present on the second day, together with J. B. Marks, Esq., and David Christie, Esq., M.P.P.

The following is an epitome of the proceedings. The minutes of the previous meeting having been read and confirmed, the Secretary read a letter from Mr. Sheriff Treadwell of L'Original, referring to several suggestions relative to the management of the Annual Exhibition, which with a number of others were subsequently considered. Mr. Treadwell will enter upon his duties as President of the Provincial Association on the 1st of January next. The Secretary had received a letter on the second day, from the only absent member of the Board, Mr. Sheriff Ruttan, who was necessarily engaged on business in the United States.—A considerable portion of the time of the Board during the first day was taken up in the consideration and adjustment of matters of detail, arising out of the recent Provincial Exhibition, which need not be here enumerated.

The subject of having Canada fully and creditably represented in the Grand Crystal Palace,

now in course of erection at Sydenham, near London, received due attention. Grains, grasses, woods, and raw productions generally, from the Colonies, will be arranged, exhibited, and taken care of, free of any charge in the above institution.—Professor John Wilson, one of the British Commissioners to the New York Worlds Exhibition, had explained the objects and regulations of the Sydenham Crystal Palace, to the members of the Board, at the late show in Hamilton. Mr. Wilson has been appointed to the Superintendence of the Agricultural and raw produce Department of the Colonies. The following resolution relative to this subject was agreed to:—

That the Board feel strongly impressed with the high importance of Professor Wilson's suggestions in regard to securing a proper and effective Exhibition, at the Sydenham Palace, of the natural productions of Canada; and consider the subject to be one which claims the best attention of the Bureau of Agriculture, and of the immediate action of the Minister of Agriculture. The Board beg leave to assure the Bureau that they are prepared to give immediate attention to any measure which shall be considered the most practical and likely to secure a fit and proper position for Canada, in the general emporium of art and industry, now preparing at Sydenham.

The Secretary was instructed to communicate at once with the Minister of Agriculture, the Board of Agriculture for Lower Canada, and with Professor Wilson, with a view to the speedy accomplishment of this object.

The Secretary read a letter of much interest and importance from Mr. Archd. M. Kellar of Chatham, on the desirableness of forming a joint

stock company, on an extensive scale, for importing improved breeds of Cattle. The Board after considering Mr. M. Kellar's proposition, thought it would be premature to take any decided action thereon at present; but instructed the Secretary to thank that gentleman for his communication, and to insert it along with the usual proceedings, in the *Agriculturist*, for the purpose of drawing the attention of Societies and enterprising individuals to the subject, who are requested to favor the Board with their views and wishes.

CHATHAM, 4th Oct., 1853.

To George Buckland, Esq., Secretary Board of Agriculture, Toronto.

SIR,—Having had the honor of being one of your associates as judge of Short-horn Durham cattle, at the Provincial Exhibition at Cobourg, I take the liberty of addressing you and submitting to your consideration a scheme for the importation of Durham cattle from England to this Province, which, I think, if carried into effect would prove beneficial to the agriculturists of Canada individually and collectively. At present the few Durham cattle in the country have been imported at a heavy expense by a few enterprising individuals, and they must sell for large prices or lose by their cattle,—consequently there are hundreds in the Province who would become distinguished breeders, if the animals could be got near themselves at what might be termed a moderate price, who are unable to bear the expense of importation for themselves, or paying the prices now demanded.

To obviate this difficulty, I would suggest that a Joint Stock Importation Society be organized, composed of the Board of Agriculture and such of the County Societies as wish to become stockholders. Let the Board of Directors of this Association be composed of two or more of the members of the Board of Agriculture, and the President of each County Society. Thus organized we shall suppose that the Board of Agriculture would appropriate at least £1000, and we might safely calculate upon £100 from each of the forty counties in Canada West, making a sum of £4000 from counties, in all £5000 as the capital of the Association. These funds should then be given to two respectable gentlemen who are good judges of stock, who would proceed to England and invest the whole in the purchase of Durham cattle: they could also charter a vessel and fit her up comfortably for carrying the stock, which would add greatly to their safety, compared to the manner in which private individuals have to ship stock. Immediately after their arrival (say at Toronto) they should be sold by auction, *confining sales to the representatives of the various Societies who had contributed to the fund*;—unless this precaution was used parties from the United States and Canada, who had not contributed directly or indirectly to aid the Association, might step in and reap all the advantages of the undertaking by purchasing the stock and taking them out of the country.

The sum which I have set down (£5000) is much smaller than might be got from the sources referred to—a little exertion on the part of a few enterprising, active men, would raise £10,000 instead of £5000, which would be all the better for the Association, as £10,000 worth would be attended with very little more expense than £5000 worth. I have no doubt the undertaking would be profitable to the stockholders, but that should be a secondary consideration, for the indirect advantages of getting good stock into the country would much more than pay for the loss of a few dollars on the money advanced. If the receipts of the sale would more than cover costs and charges, the surplus could be divided in proportion to the stock held by each Society. Or if the sales should not cover the cost, the deficiency could be made up without being felt by any one of the stockholders.

In addition to the few reasons I have given above, I would further state, that Canada is no longer a poor and dependant Colony, but is fast emerging from her obscure and humble position, to rank among the most enlightened and enterprising nations of the earth. Already has she become a formidable rival to our enterprising neighbors,—in education, commerce, manufactures and agriculture, we are fast treading on their heels; we must not flag in our exertions, but work unitedly and energetically in developing the vast resources of our noble Province, let us not rest satisfied with being a rival to the neighboring Republic, let us aim at being her equal and, if possible, her superior. She has for many years enjoyed the patronage of our people, purchasing stock, implements and goods which should be got at home; vast sums of money have thus been transferred from Canada to the States. Everything must be done to enable our farmers, above all others, to get implements, stock, or anything they need, at home, without the trouble and expense of going across the lines for them. And as stock is now in good demand and will pay the breeder to rear them for sale, they should be put within his reach. The Americans have made large importations of fine stock from England lately, and unless we do something in the way of importation also, our breeders must of necessity go to Ohio or some other State and purchase.

Should the Board deem my suggestion worthy of consideration, and think of carrying it into practice, they may rely on my co-operation in doing anything I can to assist them.

I am respectfully yours truly,  
ARCHIBALD M. KELLAR.

The expense and risk of importing live stock from the mother country having been considered, and the best means of mitigating the same, it was

*Resolved*,—That it be suggested to the Bureau of Agriculture, the desirableness and importance making arrangements with the Canadian Ocean of Steam Navigation Company for a fair rate of charges on the importation of Stock, Implements and Seeds for the use of Agriculturists in Canada.

The Secretary read a letter from Mr. Charrock, recently from England, and now residing



in Hamilton, on the subject of a draining pipe Machine, for which a liberal prize had been published in the last Premium list. The Board was glad to hear that Mr. Charrock will have such a machine in operation, as soon as he can secure his patent.

In order to strengthen the bond of union between the Board and the various Agricultural Societies in Upper Canada, it was

*Resolved*,—That it is expedient to instruct Professor Buckland, to make, at such periods of the year when he is disengaged from his duties in University College, a tour among the Agricultural Societies of Upper Canada in such manner as the Board may direct.

The design of such tours is to bring the proceedings and objects of the Board, more especially under the notice of Societies and the public; to facilitate intercommunication; and generally to spread information upon Agricultural subjects by lectures, addresses, or such other mode as may suggest itself to the Secretary.

A communication had been received from the Patent Office at Washington, accompanied by two volumes of Reports, and generously offering to furnish the Board with specimens of native and foreign seeds, &c., on the condition that the overture be reciprocated. It was considered that such a proposal might be made highly advantageous to the Experimental Farm, and otherwise promote the Agricultural interests of the country generally: whereupon it was

*Resolved*,—That the thanks of the Board be communicated to Thos. Ewbank, Esq., of the United States Patent Office Department, for a copy of their report, and for their liberal offer in regard to seeds, plants, &c., which this Board gratefully accepts and will study to reciprocate.

In order to avoid the inconvenience of having more than one Prize report for the same county, it was

*Resolved*,—That the sum of £15 be given to the writer of the best Agricultural report, on each of the following counties; viz., CARLETON, WELLAND and PRINCE EDWARD; such reports to be sent in, addressed to the Secretary of the Board of Agriculture, on, or before *June the First, 1854*. That in case the best report should be written by the Secretary of the County Society, with a view to encourage so useful and important an officer the prize shall be £20.

The Board is of opinion that it is highly desirable that these prizes be continued, till reports have been prepared and published, on all the settled counties of this section of the Province; and

that three or four counties should be selected for such purpose each year, till the whole be completed.

Mr. Matthie expressed a desire that the balance of £6 10s. remaining unappropriated in the hands of the Treasurer from his donation of £50, for extra prizes at the last exhibition, should be given to the Student in the Agricultural Class of University College, who may pass the best examination at the close of the course.

The President was instructed to communicate with the Minister of Agriculture, in order that final arrangements be made as speedily as possible, with regard to the Experimental farm.

After passing votes of thanks to G. P. Ridout Esq., M.P.P., for his services as one of the Auditors of the accounts, to the President, Secretary, and Treasurer, and Baron de Longueuil the Board rose.

#### PREMIUMS FOR AGRICULTURAL REPORTS.

In order to obviate the difficulties incidental to the conditions on which these premiums have been previously offered, the Board have determined to announce each year the names of those counties for which reports are solicited.

A premium of the value of £15, will be given to the best Report, on each of the following counties:—Carleton, Welland, and Prince Edward. If such report be written by the Secretary of the County Society of which it treats, the amount of the premiums will be £20. This difference is made simply with a view to call out and encourage that useful and important class of officers.

These Reports, in addition to the usual information required respecting the condition of Agricultural Societies within their range, should describe the various soils of the county; modes of Farming; value of land; amount of tillage and average of crops; breeds of live stock; implements and machines in use; methods of preserving and applying manures; sketch of past progress, with suggestions for further improvement. The manufacturing and commercial condition and capabilities of the county should likewise be stated, together with any other facts that would illustrate its past history or present condition.

All statistical information should be condensed as much as possible, and when practicable, put into a tabulated form. The main object of each report should be to afford any intelligent stranger that might read it, a concise, yet an adequately truthful view of the Agricultural condition and industrial pursuits of the county. While all unnecessary particulars are to be avoided in the preparation of these reports, completeness should as much as possible, be constantly kept in view. Such reports as contain the greatest amount of useful matter, will be preferred; and it is recommended that they be made sufficiently comprehensive, so as to occupy 20 or 30 printed octavo pages. The Board will not award the premium for any reprint, although it may happen to be the best sent in, unless it possess sufficient merit.

The Reports must be sent in to the Secretary of the Board of Agriculture, accompanied by a sealed note containing the name and address of the writer, on or before the 1st of June, 1854; Such reports as obtain premiums will become the property of the Board.

#### TOWNSHIP OF HAMILTON FARMERS' CLUB.

##### CONSTRUCTION OF FENCES.

(Reported for the *Cobourg Star*.)

At the monthly meeting of the Township of Hamilton Farmers' Club, held at Dickson's Inn-Court House, on Saturday, October 29th, 1853 P. R. Wright, Esq., President, in the chair.

Present—Messrs. Bourn, Newton, Masson, Bennett, Black, &c., &c., &c.

The minutes of last meeting were read. Mr. Wade introduced the subject for discussion, viz., the construction of fences, as follows:

MR. PRESIDENT AND GENTLEMEN,—

FENCING, although it may not occupy so prominent a position in the economy of farm management as many other operations, yet still must be considered of no secondary importance; for, without proper protection in this way, all other labors of the farm, no matter how skilfully or scientifically performed, are placed in constant jeopardy. And in no country in the Agricultural world are good fences required more than with us, from the great amount of our lands being still woods, or partially cleared and still in common, and also the great amount of road allowances set apart in our Township surveys, and which are in themselves a public convenience, yet, combined with all the other unfenced lands I have mentioned before, encourage our inhabitants generally to turn out a great proportion of their animals of all descriptions outside of their enclosures; consequently our fences must be of such a character as to stop a hunter from jumping, a bull or an ox

from throwing down, or a pig from squeezing through; and our common rail fences seem made on purpose to encourage these depredations. As our horses are taught from infancy to leap after their mothers two or three rails high, and often five or six, and if they try higher, and should still hang on the fence, they find it will yield to their weight; our bulls and oxen soon find their horns effective enough to throw the fence so low as to make it quite easy to get over; and the porkers, if of the weasel-shaped variety we commonly see grubbing on our road sides, find very little difficulty in squeezing themselves through between; or if they cannot manage that, they have ingenuity enough to burst out a broken or rotten rail, in order to make their way into our fields quite easy; and for some generations to come, maugre all our Township By-laws for the punishment of trespassers, good substantial fences must be our only safeguard.

The common zig-zag rail fence has been and will still continue to be, in spite of its unsightly appearance, while rail timber is to be got, our mainstay; and nothing but its expensiveness, when the rail timber or such timber as can be split is entirely exhausted on our own farms, and cannot be purchased under a certain price, within a given distance, will cause it to be superseded by something else: and on the front farms of our Township that time has already arrived. Split rails of cedar or pine or oak cannot be purchased for less than twenty-five dollars per thousand in the woods, and then probably to be drawn seven or eight miles, and when this is the case a rail fence costs as much or more than when made of boards or sawed materials.

Board or any description of straight fences, made by placing posts in the ground, are, in our frozen climate, subject to be heven or raised out of the ground, and this has been hitherto a very serious obstacle to their more general introduction; however, this may be in a great measure obviated by raising a bank of earth at the bottom of the fence, say eighteen inches or two feet high, and which not only prevents the heaving, but also saves the lower board or rail, as well as making a gutter or water-course to lead off the surplus water that may collect on the field. I have myself tried this plan for several years with the greatest success, and many of my neighbors are following the example. The principle, in a philosophic point of view, is a true one, as the lifting of a post is simply done by the expansion of the ground by the post, and that in degree as it is wet or dry. If, for instance, the ground was entirely dry, no expansion could take place; but if wet at all, the expansion is in proportion to the amount of water the ground contains; consequently, by raising a dry bank at the foot of the post, even in rather low ground, when a post would in four or five years, in the ordinary way, be entirely thrown out, with this embankment it stands very well. This system of embankment is however attended with disadvantage on the road sides, from its liability to be rooted down by the hogs, which are always running on the roads; and while speaking on the subject, I must record my disapprobation of the common practice of



turning them out at all, and in fact it amounts to a species of dishonesty, for the owners must be well aware that they can get nothing or next to nothing there, and if they live at all it must be by trespassing on their neighbors; and there is probably nothing that tends more to keep up the too often hard feelings in a rural neighborhood than these petty trespasses. For instance, you may have a little cherished spot of green sward outside of your entrance gate, and which nearly always springs earlier than anything within your enclosure; and some fine spring morning, when you go to town, you expect on your return to have it gladden your eyes, when lo! instead of that, you find that a careless neighbor's hog has turned it upside down; and when you have been at the trouble to get all your own porkers supplied with nose jewels, to see fifteen or twenty of your neighbors' hogs digging away with all their might in your meadow, maugre all your philanthropy, you cannot help but feel something that from choice you would rather not.

I myself introduced a sort of post and pole fence some five or six years ago, and which has already been copied from, to a considerable extent, and which makes a very neat as well as substantial fence—it is made by boring three inch holes through the post, and fitting the poles into them; it has the advantage of the labor of boring and turning the ends of the pole, being done by machinery, thereby saving a great deal of hand labor, which usually makes such fences expensive. But, as both round cedar posts and poles, are, as well as rails, getting scarce, I have been led to think of something as a substitute; and, as I had already got the boring and turning machine, I thought it possible to apply them to sawed materials; and, knowing well that we had a very great amount of durable timber, which could not be used for fencing in the ordinary way by splitting or being sawed into boards, such as oak, ash, birch, elm, or even maple and beech; I thought it might be sawed into a shape that would not only give it durability but strength. The common way of board fence require nails, and if sawed into flat rails, has to be morticed into the posts, which requires so much hand labor as to make it too expensive. My plan is to saw the lumber into scantling of a diamond shape, making it five inches the broadest way and three inches the other; placing the acute angle upwards, thereby putting it in the best shape for throwing off the water, rendering it next to imperishable from rot, and at the same time making it sufficiently strong to resist violence both perpendicularly and laterally; the posts can be either round or square, and bored by an augur driven by power, and the rails can be cut to fit at each end, also by power, and by this means hand labor is almost done away with; and, it at the same time not only makes the most substantial fence I have yet seen, but one that pleases the eye; and what, I would ask, adds more to the beauty of the landscape than neat pretty fences? and what is more unpleasing to the eye of the old countryman, on his first arrival in our continent, than our hideous looking zigzag fences; and I know from my own feelings, after living

here more than thirty years, that their appearance does not mend by time; as all who have seen the green lanes of England, and the beautiful hawthorn hedges in full bloom can abundantly testify. However, I most seriously consider after all our endeavors to make the natural timber of the country spin out as far as we can, that live fences must be our ultimatum. It will not probably be much attempted in our generation, but our successors will have to submit to the stern necessity, except where abundance of stone is found; and when we know so well that hedges are the principal fences in Britain, and have been for centuries, why should they not be here?—They not only make a permanent fence, but they afford protection to the fields they enclose, during our inclement winters not only by keeping the snow from blowing off the ground, but affording shelter in other ways. I have tried the English hawthorn to some extent, with moderate success, having half a mile on my own farm, and which will in two or three years be a good hedge. The English thorn not being a native of our country is subject to a great many disadvantages in the way of insects, the Aphis or plant louse being very destructive: the Slug also which has been so destructive to our Cherry and Pear trees, is equally injurious to the hawthorn; the field Mouse, in hard winters, destroy them by eating the bark; and I have now come to the conclusion when I try again, to get something indigenous or a native of our continent. There is a plant called Buckthorn, a native of the northern part of this continent, and which I think from what I have seen of it, more adapted for us than the English thorn—it is a thorny plant, and grows very thick with trimming, its appearance is more like what is called the Black thorn in England than anything else I have seen. Another plant is used in the Midland States, called the Osage Orange, but is too delicate for our climate. The Basket Willow grows well on low lands, and can be made a first-rate fence by management; and where the ground is too wet for posts to stand, or other kinds of hedging plants to grow, it will flourish exceedingly well; and now, Mr. Chairman, having exhausted the subject, so far as my own limited knowledge of it extends, I give way to the other members of the club to state theirs.

Mr. Bourn said, as regards Fencing he could say little, as he was obliged to be content with the common zigzag fence at present; he thought a stone fence the best where it could be had.

Mr. Masson said, he thought that Mr. Wade's plan would answer very well, as it could be made out of common timber; he was afraid that if the posts were made of hard wood they would rot soon. (Mr. Wade here stated, that good white oak posts would last nearly as long as cedar.) He (Mr. Masson) thought that the greater drawback to the board fences with a ditch on both sides was, that they took up too much ground, especially on dry land, which did not require ditches to carry off the water.

Mr. Black said, he had little experience in fences in this country; he thought Mr. Wade's plan much superior to the common zigzag fence; as it would neither take up so much ground nor be such a harbor for weeds as the common kind;

but, he would rather see good hedges than any kind of board fence; he thought that hedges would answer very well here, both for the ditches to carry off the water and the hedges for shelter to the fields; he thought that it would greatly improve our climate if all our fields were enclosed with good thorn hedges, and from what he had seen in the neighborhood he did not think it would cost much to raise hedges here.

A vote of thanks was given to Mr. J. Wade for his essay.

The next meeting of the Club was appointed to be held at Dickson's Inn, Court House, on the last Saturday of November, at 2 o'clock.

W. RIDDELL, *Secretary*.

#### GUELPH FARMERS' CLUB.

##### SHEEP HUSBANDRY.

The monthly meeting of this institution took place at the British Hotel on Friday last, Colonel Saunders in the chair, when Lazarus Parkinson, Esquire, delivered the following address:—

MR. PRESIDENT AND GENTLEMEN,—In accordance with previous arrangements, we have met for the purpose of investigating and discussing the following subjects:—First, which is the best breed of Sheep adapted for this locality. Second, the most advantageous mode of wintering them. Seeing that it has devolved upon me to introduce the propositions intended to be considered on the present occasion, permit me to request you to keep before your minds a clear and definite apprehension of the questions before us.

Before I can rationally answer the first question, it will be necessary for me to state a few of the reasons on which my answer rests, or briefly to refer to the premises upon which my conclusions are based. The nature of the proposition before us shows that it is an admitted fact that no breed of sheep can be found that will prove themselves to be more profitable than any other under all circumstances, and on all soils, and in all the varied climates of the earth. We must therefore take into consideration the nature of our soil and climate—our present and prospective markets. Our soil, then, is of that description which renders it well adapted for a mixed system of husbandry; and that is the system which in the long run will prove the most profitable to us as farmers. When properly cultivated it will produce good crops of all the varieties of grain generally raised on the farm. It is also well adapted for the growing of roots, and when seeded down for the purpose of mowing or pasturing, it yields a good supply of clover and other nutritive grasses. This section of the country is generally well supplied with good water, which is very necessary for all kinds of stock—sheep not excepted,—for it contributes much to their health, and consequent thriftiness. From the facts before us, and with which you are all familiar, we come to the obvious conclusion, that the nature and quality of our soil evidently mark it out as being well qualified for the purpose of sustaining and bringing to maturity any variety of what is termed the large or long-wooled breeds of sheep.

With regard to our climate, it appears to agree well with the sheep: they are generally healthy,

and are not subject to many of the diseases to which they are liable in Britain, the only serious drawback being the length of the winters; and this we must take into consideration, in order to arrive at a correct conclusion in relation to the subject under consideration. The profitable sheep for us, then, should possess sufficient hardiness of constitution and a good covering of wool to enable them to stand the severity of our winters, combined with *early maturity* and *aptitude* to fatten. In relation to our markets, I think we may safely say that the demand is fully equal to the supply, and that the present prices are remunerative; and there is every probability of their continuing to be so at least for some time to come. For I have no idea that the vegetarian notions of our republican neighbors will ever prevail in Canada to such an extent as materially to affect the demand for good beef and mutton. We generally have a good demand for early mutton. Sheep that are fit for the butcher in the months of May and June command the best prices. From the nature of our soil and climate, the present and prospective state of our markets, we come to the conclusion that the Leicester variety is the most profitable kind of sheep for us to breed. For in no other breed of sheep will be found in such perfection those qualities inseparably connected with the profitable sheep for us, namely, *early maturity* and *facility to fatten*. When kept thro' the winter in good store condition, they will be ready for the butcher by the latter end of May, or during the month of June, when the farmer will find ready sale for them at remunerative prices; and the additional advantage of having his pasture left clear for the benefit of his other stock. This variety has become so celebrated for their good qualities that many are called Leicesters that do not possess those qualities that would entitle them to the name.

In order that we may have a clear conception of the form and qualities that characterise the Bakewell or true Leicester breed, allow me to lay before you a description of them as given by that noted English writer on domestic animals, William Youatt. He says, "The head should be hornless; the eyes prominent, but with a quiet expression; the ears thin, long, and directed backwards; the neck full and broad at its base, and gradually tapering to the head; the breast broad and full; the shoulders broad and round; the arm fleshy through its whole extent, even to the knee; the bones of the leg small, standing wide apart—no looseness of skin about them, and comparatively bare of wool. The quarters long and full; the pelt moderately thin, but soft and elastic, and covered with a good quantity of white wool, not so long as in some breeds, but considerably finer." In speaking of their good qualities and their adaptation to certain soils, in the same work from which I have already quoted, he also says, "No other sort of sheep is fit for the butcher at so early an age; and although they are not calculated for the poorest soils, where the herbage is so scanty that the sheep must walk over a good deal of ground for the purpose of procuring its food, no other sort of sheep in soils of a moderate or superior quality, is so profitable to the breeder."



Considering it merely my duty to introduce the subject, I shall now leave to the meeting its further discussion.

The second subject for our discussion is, which is the best and most economical mode of wintering Sheep.

In relation to this subject, permit me to say, that I cannot speak with much assurance on account of not having practically tested the merit of any great variety of ways of accomplishing this desirable object. Still, there are some things connected with the subject before us, in regard to which we feel prepared to offer a few thoughts, which may not altogether be unprofitable, and I shall feel much gratified if the present discussion should have the tendency in any degree to lead some of the owners of those innocent and highly useful animals, to provide better shelter for them, and also to see that they are regularly and properly fed during the winter. For the way they are by some of our farmers left exposed to the cold piercing winds of winter, without shelter, and their feed thrown down under their feet, is a sad comment upon the intelligence and humanity of their owners. No plan that can be adopted for the purpose of wintering sheep will be found universally applicable, but must necessarily be local or sectional in its practical application; being dependant on the nature of the climate, and the capabilities of the soil, for the production of certain kinds of crops; and also upon the rotation or system which the farmer may adopt (all things considered) as being the best under the circumstances in which he is placed. Considering the length and severity of our Canadian winters, I think we may confidently affirm that, in order to winter sheep profitably it is absolutely necessary to provide comfortable sheds for them, and racks, and trough, for the reception of their food, constructed in such a manner that they may consume their allotted portion without wasting it, and with due regard to the keeping of their wool as clean as possible.

I shall now briefly lay before you the manner in which I have wintered my sheep for the last few years, and which has answered pretty well. In the beginning of winter I commence feeding them with pea straw. As the sheep will only eat a portion of it, I give it to them in larger quantities than if they were fed on good hay. I have my racks cleared of those portions of the straw which is left, after they have picked through it, once a day. When my pea straw has been good, it has been their principal food as long as it lasted. I say principal, because they also have had an occasional feed of hay. But when the straw has been injured by the weather, hay once a day in addition, and I would approve also of adding a few cut turnips. I would here state, that when breeding ewes are brought in to their winter quarters, in proper condition, it is not advisable to over feed them with turnips, or grain, or anything else, that will cause them to become over fat; for such a state is unfavorable to the production of strong, healthy lambs. When my supply of pea straw becomes exhausted, I then feed them with clover hay. As to quantity, as much as they will eat without wasting it. In order to prepare the ewes for the lambing season,

I have begun some time in February to give them turnips once a day, then as they become heavier with lamb, say about the first of March, twice, moderately, until they have lambed.—After that, as many good cut turnips, as much good hay as they will eat until the grass comes. By following this plan, my ewes have had a better supply of milk, and the lambs have done better than they used to do when I was in the habit of feeding them after lambing, with scalded bran, chop-stuff, or boiled oats. When they will eat the hay and turnips no longer, and the fresh and tender grass becomes abundant, to prevent it from scouring them too much, I consider it a good plan to give them about a pint of oats, each, for about a week or ten days.

Having, in my imperfect way, briefly introduced the subject, without enlarging upon it, I shall now be happy to hear others, that I may benefit by their experience.

Mr. Harland coincided in the statements made by Mr. Parkinson, remarking on the propriety of giving succulent food to the sheep in Spring till the grass was well up. The great object of the farmer was to raise the breed that would suit the climate and produce both wool and mutton. He was persuaded that, in the present condition of the Province, the Leicesters would give nearly double the average return of any other breed, and were consequently the best adapted for the locality. It was all very well for the wool-buyers to cry out for *fine* wool, while they would scarce give a penny a pound more for it.

Mr. John Card was of opinion that the cross from the Leicester ram and the Southdown ewe came sooner to maturity, and was easier kept than the pure Leicesters. He was sorry the Agricultural Society had thrown the Southdowns overboard.

Mr. Harland said the Southdowns were no doubt well adapted for their native climate, and the short mossy pasture produced in some districts of England; but here, where we had no short downs, but long rank herbage affording a full bite, the case was different, and the full-wooled Leicesters were the best stock.

Mr. Card said that lambs from the cross he had mentioned were ready to kill off sooner and of greater weight than the Leicesters of the same age.

Mr. Harland said that in order to keep up such a breed, it would be necessary to import Southdown rams continuously. Would it be advisable to do so, merely for the purpose of procuring early lambs for the butcher?

Mr. Wright thought Mr. Card's object—to procure good lambs for the butcher—might be obtained, if, in addition to good Southdown rams, there were plenty of pure Leicester ewes in stock, but forty-nine out of fifty farmers had only grades, common Canadian Sheep improved by crossing with Leicester rams. There were several points in connection with the subject which had not been noticed, which he would wish to hear discussed now, or which might form subject matter for another meeting, namely, What was the best time for having lambs dropped; whether early or late ones were most profitable; the best sort of food; and whether it were better to keep salt continually by the sheep,

or give it once or twice a week. He could wish to hear more discussion on wintering and general management.

Mr. PARKINSON said, if he understood Mr. Card aright, his object in keeping up two pure breeds was merely to obtain good lambs for the butcher. Such an object could be quite as well accomplished at less cost. The Leicester ewe was not a very good milker, but the common Canadian ewes were both good milkers and good nurses, and by putting these to Leicester rams, early and excellent lambs could be procured.

Mr. Harland considered the Leicesters the best breed for the country, and would have none other.

Mr. Parkinson had no desire for such crosses, none certainly for such a purpose—breeding lambs for the butcher. He could make five-fold more by bringing his lambs to maturity than by killing them. What he meant by maturity was, the full growth and fatness of the animal at the earliest possible age. Sheep, fit for the butcher when ready to shear, would command a good price.

Mr. Harland enquired what wool and weight were obtainable on an average from sheep 15 months old.

Mr. Parkinson said his shearings averaged 6 lbs. of wool each, several had given  $6\frac{1}{2}$  to  $7\frac{1}{2}$ . As to weight, he could not speak so definitely, having generally saved his best male lambs for rams; the few wethers he raised were not a fair average. He had now two pair of shearing twin wethers, which he believed would average 30lbs. a quarter. His ewes generally dropt their lambs from the 20th to the 25th of March, so that these shearings would be some nineteen months old. They had received a little extra feed during winter, a few turnips and a little hay daily, in addition to pea straw, and they had been shut up since the recent snow came on.

Mr. Harland said he would ask if any other breed would give such weight at the same age?

Mr. Card said his object was to produce early lambs, that could be well fattened and got off before winter. Last year he put his ewes to a Leicester ram; he had killed lambs of different breeds, and he found he had 3lbs. a quarter more from a Southdown and Leicester cross than from pure Leicesters. Two lambs of the former sort, at four and a half months old, averaged 13lbs to the quarter.

Mr. Parkinson could not say what his lambs would weigh at four months, as he never dreamt of killing at such an age. He remembered killing a lamb he did not think worth raising when six months old; it weighed 16 to 17lbs a quarter. As to salt, he did not think it beneficial to give it to them more than twice a week in summer, and perhaps once in winter. When left without salt for any considerable period, the sheep would have a strong desire for it, and it would be injudicious to put large quantities before them at irregular periods, when the younger animals, more especially, by eating too much, would be injured by scouring. Then, as to the best season for having the lambs dropt, he had no difficulty in raising lambs before the grass, by giving plenty of turnips. When formerly the ewes had twins, and were without succulent food, they generally

lost one of each pair for want of milk. In 1852, he raised 33 lambs from 26 ewes, and in 1853, 32 lambs from 25 ewes. He thought the 20th of March was a very good season for lambs to be dropt; they then had a good start when the grass came. When a lamb chanced to come a month later, although it went a month younger to grass, its senior had got so much the start, it could not catch up to it all the summer.

Mr. Harland said, if lambs were starved and stunted by bad nursing in the early part of the season, it were certainly better to have them later, but if well milked, the early dropt had an obvious advantage over those that came late.

Mr. Wright wished to know if it was considered advantageous to keep sheep warm in winter.

Mr. Parkinson would keep them well sheltered and dry. One reason for his preferring early lambing was, that in the end of March and beginning of April, there was no great pressure of other farm work, and consequently more leisure to attend to this department.

Mr. Harland wished to know the period at which Mr. Parkinson put his ewes to the ram.

Mr. Parkinson—From 20th October to 1st November, and the lambs would then be dropt from 20th March to 1st April. He did not approve of giving mashes of warm food—good sound turnips, if the sheep were used to them, were much better, and he believed they were also better for cows than warm mashes, which were apt to give surfeits.

The Chairman had no doubt the meeting was quite of opinion that the Leicesters were the best sheep for the country.

Mr. Harland wished to know the best remedy for ticks.

Mr. Parkinson said that if the lambs were allowed to run with the flock for a week after shearing, it would be found that the ticks had left the ewes, and got on the lambs; then, if these suffered from ticks, he used a wash recommended by Mr. Thurtell, 2lbs of arsenic boiled in 2 pints of water, with a small quantity of soap to help the decomposition; the liquid to be diluted with 10 or 12 additional pails of water, and the lambs immersed. The process would perfectly destroy the ticks.

Mr. Harland spoke of a strong decoction of tobacco as an approved remedy.

Mr. Parkinson, in answer to queries, said he did not know how he would manage in the event of finding his sheep bad with ticks in the beginning of winter. He thought it would perhaps be best to let them alone.

Mr. Wright would prefer immersing them even at that period. [From consideration of the length of wool the sheep would at this season have obtained, this opinion did not appear to be generally acquiesced in].

Mr. Harland had heard of mercurial ointment being applied in such cases.

Mr. Parkinson thought the 1st of September a good time for weaning. The lambs would then be sufficiently strong, and the ewes would have time to make up before winter.

Mr. Harland thought the 1st of August would not be too early, only that from the condition of



the pasturage at that season, the ewes might be injured by an overflow of milk; 5 months' suckling was quite enough. He wished to impress it on all, that the common belief, that sheep could do without water, was very erroneous. *Sheep could not do without water.*

Thanks having been voted to Mr. Parkinson for his address, and to the Press for their attention in reporting, it was resolved that the subject for consideration at the next meeting should be, "The best and most profitable mode of Wintering Horned Cattle;" Mr. D. Stirton, of Püslinch, to open the discussion.

The next meeting of the Club takes place on Friday, the 9th of December, at 4 o'clock, P.M.

Mr. Harland stated, that at a recent meeting of the Board of Agriculture, it had been arranged that after the close of the College Session, the Secretary, Professor Buckland, should make a professional tour of the Province, to deliver Agricultural Lectures. Mr. Harland had made the request, which he had no doubt would be complied with, that the lecture in Guelph would be on the occasion of the next County Show.—*Guelph Herald.*

#### ON FEEDING HORSES AND PREVENTING GLANDERS AND FARCY.

A distinguished veterinary surgeon, Professor DUN, of the Edinburgh Veterinary College, calls attention to the following errors in the dieting of farm horses, which are not less common in this country than in Scotland.

1st. Much too long an interval is allowed to intervene between the times of feeding. Horses are frequently worked six hours consecutively, during which time they receive no food whatever. This practice has been found by experience to be prejudicial to their health, inducing debility and predisposing to diseases of the digestive system. The natural habits and digestive organs of the horse alike prove that he is not designed for long fasts; as the smallness of his stomach indicates the necessity of supplying it with comparatively small quantities of aliment at short intervals. When at liberty, he eats during twenty out of the twenty-four hours. This natural habit may be modified, but pains should be taken not to run into the opposite extreme. A horse or mule when at work through the day on the farm, should have some nutritious food every five hours at the outside, if the purpose is not to impair his constitutional powers. When a plow team is taken up early in the morning, and expected to work till noon before regular feeding, it is the present practice of the best Scotch farmers to give each horse a lunch of a pound or more of oat-meal or bean-meal between nine and ten o'clock. Some prefer to mix oat and bean or pea-meal, which is wet with water and "fired" or baked; the cooking enables the digestive organs to render the nutritive elements at once available for the support of the exactions of labor. Dr. Dun is acquainted with several farmers

"who give these cakes whenever the work is severe and the hours long, and all of them agree that their horses are now in much better heart and condition, and less frequently attacked by indigestion and cholic, than they were when subjected to protracted abstinence, and without any intermediate meal."

2d. Food may be improper on account of over quantity, excess of nutritiveness, or bad quality. By taking too large a quantity of food into the stomach at once, the immediate bad consequences may be wind cholic, inflammation of the bowels and the surrounding membranes, a founder; and occasionally, the swelling of food eaten dry causes a rupture of the stomach or intestines.—An animal scantily fed from day to day, sometimes gets loose and finds access to a bag or bin of grain, and being hungry, gorges himself almost to suffocation; or a bad servant may feed to excess, and out of all reason. We have frequently wondered why grain or water taken into the stomach of a horse should so immediately affect his feet, producing the inflammation called *laminitis*—an inflamed state of the extreme vascular membrane or lamina of the hoof. Let us see if we can get at the philosophy of a common founder. A translation of a positive disease from one part of the system to another, by what doctors call *metastasis*, is common enough; but a horse may be foundered where there is no positive disorder in the digestive organs, and only an unnatural irritation from the presence of water or food improperly taken into the stomach. The exercise and heating to which he has been subjected on the highway or elsewhere, have brought the vascular and tender parts within the hoof into a condition approximating inflammation, before either water or food is swallowed. The antecedent hard service of the feet is a material fact in the case; for without previous driving, and too often hard driving, an acute founder is seldom seen. A sudden shock is inflicted on the nervous system in the stomach, which is sound, and its force shatters first, not the sound stomach, but the heated, enfeebled, and partially inflamed feet, which are connected with the stomach by abundant nerves. If the feet of a horse be covered with water this revulsion from the stomach to the lamina of the hoofs seldom occurs to an injurious degree. This brief explanation indicates the propriety of bleeding, and letting a recently foundered horse stand in a stream of water to cool his feet.—Give him rest and physic. Proper feeding implies the use of neither too much nor too little grain, and a due proportion of hay, corn blades, shucks, straw, pea-vines, or other forage, which had better be cut before it is consumed. If this forage is sound, bright, and was harvested at the right time, less grain will suffice to keep horses

in a good condition. Where one has neither hay, nor blades, nor straw, much care should be, had lest highly nutritive food, like corn, produce eruptions on the skin, enlargement of the liver yellow water, and other maladies. If no other bulky forage can be had, horses should have browse with their grain to aid in distending the stomach and intestines; for bulk is an important element in healthy digestion.

*Glanders and farcy* have a common origin, the vitiated state of the blood; and are regarded as only different stages of a progressive disorder. As induced by insufficient or bad food, farcy usually appears first; and may continue for some time before any symptoms of glanders present themselves. Farcy is characterized as an unhealthy inflammation of the absorbent vessels and glands, which become swollen from the deposition of lymph, and soon ulcerate and discharge matter of a morbid and varying character. The poison from farcy-buds is carried in the blood to all parts of the body, and under favorable circumstances, rapidly produces itself. Tubercles are formed in all the lymphatic glands and in the substance of the lungs. Ulcerations appear on the mucous membrane of the nostrils, which is attacked on account of its high vascularity. Those parts first undergo disintegration which require for their healthy existence the largest amount of blood. Between the first symptoms of farcy and glanders, and the fatal termination of the disease, a very variable time intervenes, according to the strength or feebleness of the constitution, and the virulence of the malady. Whatever impairs the general health, or in any way vitiates the integrity of the system, may be regarded as a cause of glanders.—It follows colds, influenzas, strangles, diabetes, and perhaps all other debilitating affections incident to bad shelters, over-work, and insufficient food. Like all other diseases that mark the premature loss of vital power, farcy and glanders are much easier prevented than cured. When from any cause the glands, mucous or serous membranes of an animal become inflamed, while its general health and constitution are yet unimpaired, the purulent or aqueous secretions that may ensue, as in colds or common distempers, are of a healthy nature, and they serve to work off the inflammatory action, which results in a speedy and perfect recovery. To maintain the stamina of life in full vigor in all animals of any value, is an object of great importance; for the principle applies to persons as well as to beasts and birds. Proper care and protection, avoiding all extremes and unnecessary exposures, and feeding regularly, that the system may never be surfeited by any excess of nutrient matter in the digestive and assimilative organs, and never weakened by a deficiency of the same, are the

cardinal points in animal physiology to be kept constantly in view. All infected animals should be removed from those still undiseased, lest the exhalations from the former, and perhaps direct contact, communicate the distemper to the latter. In systems pre-disposed to any malady, it requires the least possible poison, acting as leaven, to excite a morbid action in organs previously in an apparently sound condition. Under skilful treatment, glandered horses sometimes live and perform labor for a number of years.—This, however, only proves what every close observer must have witnessed, that had the same care been taken of health before it was partially sacrificed, that was exhibited afterwards, no injury of the kind would have occurred. When medical men shall come to understand their noble mission, and the people comprehend their true interests, the *prevention* of maladies, not their *cure*, will be the grand purpose of what is now the Healing Art. Physicians ought to be better paid for the patient study and wisdom that prevents sickness, with its pains, loss of time, and other incidental expenses and misfortunes, than for the less skill of treating diseases according to the prescribed rules and theories of the profession.

#### THE BREEDING, REARING, AND FATTENING OF SWINE.

There is abundant room for the exercise of skill and talent in the breeding, rearing, and fattening of swine. Of all nations, the United States have the greatest facilities for prosecuting this branch of husbandry in the most economical manner, by reason of the fact that Indian corn may be grown by American farmers on which to feed hogs, cheaper than in any other country. It is our superior natural advantages for keeping this class of animals that makes the swine of American husbandmen excel their sheep in numbers nearly ten millions. Tennessee has four times more hogs than sheep; and the business of producing pork, lard, and bacon for foreign consumption, extends much more rapidly than wool-growing, although a pretty high tariff has been brought to bear in favor of the latter.

Less attention is paid to the breeding of hogs generally speaking, than to any other domestic animals. This neglect leads to their deterioration in many districts, particularly where pork or bacon is not a staple of agriculture. The remedy lies in keeping a smaller number, selecting both males and females with the greatest care as to form, quiet habits, tendency to take on flesh, and the females should be good nurses. Breeding in-and-in, or in too close relationship, is a common error with farmers who allow their hogs to run in large herds, and with little regard



to males. Carelessness in the propagation of swine can not be too severely censured; for beyond all question it imposes a needless loss on the country of many millions of dollars every year.

One should breed large, or small, or medium sized hogs, according to the market, and the cheapness with which they can grow the food consumed by this kind of stock. As a general rule, hogs of medium size, well fattened, are most desirable, although instances are not rare where packers and hog buyers pay a premium for heavy porkers. They are said to cut up to a better advantage, and yield a larger cash return per 100 pounds. The intelligent farmer will readily learn what his market calls for, and meet it in the most economical way. Having wisely selected that breed which suits his circumstances best, he will not allow his sows to bring up more pigs than they can fairly supply with milk, unless he has the milk of cows to aid in pushing them forward in the first two months of their existence. Where hog-raising is prosecuted on an extensive scale, pigs are wholly dependent on their mothers for nutriment for some weeks when young; and then is the time when their constitutional powers and habits are mainly fixed for life. A pig once seriously stunted, is irreparably damaged; and we cannot too earnestly insist on the policy of attempting to rear no more than one can feed well all their days. Cheap meat—that is, meat made at a small cost to the producer, is that which is the product of cheaply grown food, not that obtained from half starved pigs, shoats, and stock-hogs. It is all-important to the farmer who makes fat-hogs his principal crop, that he understand the art of producing clover, peas, oats, and corn in the cheapest possible manner. Fresh clover seeds are exceedingly valuable as ranges for large herds of swine; they may even be wintered on good clover hay, although corn, peas, oats and roots are cheaper winter feed. To produce meat at the minimum cost, whether pork, beef, or mutton, one must have rich land. The farmers of New York and New England cannot compete successfully with those of the richest portions of Ohio and Indiana in producing fat hogs, because they neglect to improve their lands with a view to have them equal to the best on the Scioto and Wabash rivers. To make millions of fat hogs on lean land as cheaply as it may be done on fat land, is an impossibility. But if the farmers in Atlantic States will first fatten their land, it may be continued so as easily as any land at the West. One great advantage of pork-making is, the facilities it affords for the improvement of one's farm; for all the crops being consumed on the land, it regains not only the mineral elements of said crops drawn from the soil, but a consider-

able share of the organic elements taken from the atmosphere. It is impossible to rear and fatten hogs and not make a good deal of rich and valuable manure; but it is easy to allow manure to be dropped in the woods, or in low swampy grounds, where it is not needed, and where hogs are allowed to run. The art of rearing hogs at the greatest profit includes the husbanding of all the dung and urine produced by them in the best possible manner. In this way alone can one economically fatten his corn and clover fields as well as his hogs. Let them have both shelter and water in the lots where they feed or are fed. While young they need a reasonable amount of exercise to develop muscle and bone, and for their health. In a state of nature in forests, swine take considerable exercise in searching for their daily food; and in this way they acquire great strength of limb and muscle, and remarkable constitutional powers of endurance. Many families of swine are injured by too high feeding when young; and this remark will apply to shoats, horn cattle, and some of the large mutton sheep, as kept in England. Excessive fatness is so unnatural a condition as to amount to a positive disease; and if long continued from birth till death in a family, its constitutional powers will gradually fail, and the race become extinct.

There is a golden mean in this matter, which the stock-grower will do well to study and follow. If allowed to range in a good clover, pea, or oat field, growing hogs will take just the exercise that is best for them, and salt as well as water should be provided, adding a little sulphur and ashes. When put up to complete the fattening process, if one cannot conveniently grind as well as cook the grain consumed, it should, at least, be boiled in large kettles. This is not an expensive operation, and cooking, by rendering the starch in corn or other feed soluble, like gum, materially increases the nutritive value of all grain and tubers fed to swine. This does not impair the quality of the manure, while it augments the yield of fat in the animal. Hogs should be kept reasonably warm, dry, and be regularly fed. As a matter of profit, care should be taken not to feed too long before selling or killing them. On the other hand, one may not feed long enough to attain the maximum profit. As in other departments of husbandry, experience and observation can alone make one skillful in the breeding, rearing, and fattening swine.—*Gene-see Farmer*.

#### NEW VARIETY OF WHEAT.

Plants as well as animals are sometimes improved by cross-breeding. A new kind of wheat has been formed in this way which has received the gold medal of the Highland Agricultural So-

ciety of Scotland, and a prize medal of the Great Exhibition, London, in 1851. The following remarks are from a pamphlet published in England describing the origin and properties of the hybrid variety:—

“New varieties of our cultivated plants generally owe their introduction to accident rather than to a systematic plan continued through a long series of years. A farmer is struck by the appearance of a few ears of corn, either growing in the field, or what is more generally the case, in some place where the soil and circumstances are favorable for a luxuriant growth. He preserves and cultivates the seed, and in a year or two introduces it as a new and improved variety, or he may select a large and well shaped root from his turnip field, and raise stock of seed from it; such is the usual method, and it is one that has been adopted with much success; but though careful selection and cultivation may alter the appearance and growth of a plant, and improve its produce and quality, yet it can hardly be adopted as a means of introducing new varieties, but rather to improve those we already possess. In the same manner as the judicious breeder selects his cattle for those properties which experience tells him will be imparted to their offspring, in greater or less perfection in proportion as the system of feeding is judicious or the reverse, just so the seed farmer finds the acquired luxuriance or quality of a single plant is continued by its seed in the production of similar plants, in greater or less perfection according as the soil, climate, and season are favorable to the growth of that plant.

Much has been done by improving the various breeds of cattle, yet, with the same care in the judicious selection of agricultural seeds as of live stock, no doubt the result would be equally satisfactory. It is a matter that demands our serious attention, for if we can by this means add but one bushel per acre to our produce, it will, in the aggregate of the whole country, become an item of vast importance. In very many cases I have seen the production from seed of a good variety exceeding to the extent of seven or eight bushels that of another kind grown near it, under exactly the same circumstances of soil and tillage, and the same with roots, to the extent of as many tons; thus it seriously affects the individual farmer, and it becomes of vast importance to the public generally that only the best and most productive of agricultural plants should be cultivated.

But whatever may be done by selection and cultivation, it is by hybridization alone that varieties capable of permanently retaining their peculiarity of form can be obtained; and on any that are so constantly brought before the public must either be old sorts with fresh names, or owe their origin to accidental impregnation. Cultivation and selection may for a time alter the form of plants, but under a different system of treatment they return to their original state: with hybrids it is otherwise. It is a matter of some importance that the form and character of plants may be combined or altered with so much ease; the operation merely requires patience and careful selection.

The Hybrid wheat, which is now offered to public notice, is a red wheat, with stiff straw of a

medium size, and is similar to one of the best specimens shown at the Great Exhibition. It owes its origin, as a distinct variety, to the following circumstances:—

In the year 1846, I grew in a garden at Hengrave, near Bury St. Edmunds, a few plants of Piper's Thicket wheat, a red variety, then recently introduced by Mr. Piper of Colne Engain, in Essex, and remarkable for its short, thickly clustered ear, its short stiff straw, its productiveness in a favorable season, and its liability to blight in an unfavorable one, rather than for the quality of its produce. I thought that some of these bad qualities might be neutralized, and new varieties be obtained, partaking more or less of the good qualities of both parents; and with this view I inoculated (as described in the Illustrated Official Catalogue of the Great Exhibition) the Thicket wheat with pollen chiefly taken from the Hopetown variety, a well known white wheat of fine quality, with long straw, and with an ear much longer, though not so closely set as that of the Piper's Thicket.—in fact, forming to the latter a perfect contrast. From this I obtained a few shrivelled grains, which I planted early in the autumn of the same year, and by division of the roots I greatly increased the number of plants. The produce was many kinds, both of red and white wheat; some of the ears bore a perfect resemblance to the Piper's Thicket; others partook of the character of the Hopetown in everything except in the color of the chaff; others had half the ear thin and open; and the remainder close set, thus, in the same ear showing the same characteristics of each kind.

The cultivation of the Hybrid wheat has been continued up to the present time, and by careful hand-picking an even sample is now obtained.

## WHAT IS THE BEST MODE OF CASTRATION?

BY T. HURFORD, M. R. C. V. S., 5TH KING'S HUSSARS

Which is the best mode of castration? If you ask the question of five or six men, you will probably receive as many different answers. I have tried the actual cautery, the clams, the ligature, and scraping; and I prefer the last; it being simple, safe and speedy.

You have, doubtless, tried it, and perhaps most of your readers have performed the operation. However, at the risk of telling a twice-told tale, I will endeavor to describe the *mode of scraping*. You begin as for castration in the ordinary way. Free the testicle, and grasp it with the left hand; divide the seminal part of the cord, and, with a tough-edged knife, *scrape* the vascular cord lengthways, until you scrape through it. Simple enough, and speedy, too, since from first cut to last scrape takes rather less than twenty seconds. I have done it in sixteen, and safely, for I never knew a horse bleed more than I wanted, and you have a simple wound without any foreign substance to deal with. The horses stand quiet for nearly three days, being merely rubbed down. On the third day, the coagulum is washed away, and the parts cleaned, and nothing more is required after than to con-



tinued to keep them clean. Tetanus is *not* a frequent sequel to castration; though I saw last month you had put a "?" after what I wrote: as to the time most likely for an attack, I have always found it to come on just as the wound has healed, no matter in *what* part of the body it may be. Those attacks arising from castration, generally manifest themselves from the fifteenth to the twentieth day; but I have seen them both earlier and later. As a rule, I do not castrate during the hot months, nor during the heavy rains. Wounds and ulcers generally take on an unhealthy action at those seasons, and particularly during rains. But I have operated in every month of the year.

Will Mr. Gavin excuse me, if I say in any future cases of tetanus, "use *camphor*." I think he will find it one of the most useful medicines. He will, I venture to say, agree with me, that blisters are of no use in tetanus.—*London Veterinarian*.

#### HINTS AS TO MANURE.

Hoofs, hairs, feathers, skins, wool, contain more than fifty per cent, of carbon, and from thirteen to eighteen per cent, nitrogen, besides sulphur, salts of lime, of soda, and of magnesia. These substances hold, therefore, the first rank, as it were, among manures; and as a long time is required for their decomposition, their action may often last for seven, or eight years. They yield excellent results, especially when made into a compost for potatoes, turnips, hops, hay, and, generally on meadow land. Hairs spread upon meadows, are said to augment the crop three fold; and the Chinese, we are told, are so well aware of the very great value of that manure, that they carefully collect the hair every time that they have their heads shaved—and the operation is performed every fortnight—and sell it to their farmers. Now, the crop of hair which every individual leaves at the hair cutter's yearly, amounts to about half a pound; reckoning, therefore, at thirteen millions, the number of individuals who in great Britain and Ireland, are undergoing the process of shaving and hair cutting, we have a production of about three thousand tons of hair—that is, of manure of the most valuable kind—since it represents, at least, one hundred and fifty thousand tons of ordinary farm yard manure—which might be collected almost without trouble, but which on the contrary, such is our carelessness or indolence in those matters, is, I believe, invariably swept away in our streets or sewers, and utterly wasted.—*Farmer's Manual of Agricultural Chemistry*.

#### SHOEING HORSES.

The following are the regulations of the British Army upon this subject. They were prepared by a mixed commission of officers and eminent experienced professional men, and have recently been issued:

1. The shoe is to be bevelled off so as to leave a space and prevent pressure to the sole.
2. It is not to be groved or fettered, but simply punched, and the nails countersunk.

3. Caulking is to be applied to the hind shoe only, and is to be confined to the outside heel. The inside heel is to be thickened in proportion.

4. The weight of the shoe is to be from twelve to fifteen ounces, according to the size of the horse.

5. Horses are to be shod with not less than six nails in the fore, and seven in the hind shoe; nor is the shoe to be attached with less than three nails in each side.

6. In preparing the foot for the Shoe, as little as possible should be pared out; and the operation should be confined to the exfoliating parts of the foot only.

7. Both the fore and the hind shoes are to be made with a single clip at the toes.

#### WINTER FLAX.

The Secretary of the New York State Agricultural Society, has received from a Russian gentleman by the name of Falkersborf, a sample of the seed of a variety of winter flax. A larger quantity is promised, which is expected to arrive in the fall. The same gentleman also proposes to send some of "the seed whose weed furnishes the persiese powders for killing insects of all kinds."

The advantages claimed for the winter flax, are set forth as follows:

a. Besides it has the advantage to be sown in the fall, nor subject to be sown either too early or too late, as this is often the case with the spring seed, and has always a failure of the crop in its train.

b. That the winter seed shoots sooner, yet before the weeds come out, which latter are kept back by it; it is earlier ripe, and can be brought in before the hands are wanted for other agricultural operations.

c. In order to prevent the shooting in the fall the seed must be worked in by the plough, as late as possible, and then the seed is not damaged neither by 20 degrees of cold (Reaumur). In the spring, as soon as the field is dry, it must be lightly harrowed. It shoots with the first rays of the warm sun, and is already in flower when other spring seed is sown, and before the insects can do it any harm.

d. This winter seed is glossy, but dark and mixed with black grains, yet all shoot. It is a great deal more oily than the common seed.

#### COMMUNICATION OF IDEAS AMONG CATTLE.

There is a large shallow inlet on the Prussian shore known as the Frische Haff, crossed for the first time by steamers ten or twelve years ago. Upon their way the vessels paddle by a common near the Elbing river, upon which the townspeople turn cattle out to graze. When the first steamers passed this common they caused every flank of beef to quake; such fiends in dragon shape had never appeared before to try the nerves of any cow, or to excite wrath in the bully bosom of the most experienced among the warriors of the herd. With tails erect, therefore, and heads bent down the whole colony upon the common charged over dykes and ditches inland, roaring

horribly. Every appearance of the steamer, to the great joy of the crew, caused a panic and a scattering of oxen, until, after a few days, the animals had become hardened to the sight, and took it as a thing of course, which meant no harm to them. Now, all the horned beasts on the common during that first year were in the usual way placed there to be fatted. In the following spring they had gone the way of beef, and their places was filled by a new generation altogether. So soon, therefore, as the Haff was clear of ice, and the steamers again began to ply daily upon the route between Elbing and Konsiberg, the sailors were on the alert again to witness the old scene of uproar by the water side. But they were disappointed. Though there was the pasture ground well stocked with new recruits for the market, who had come from distant inland farms or out of stalls within the town, though scarcely one of them—if any one—had ever seen the apparition of a steamboat, not a cow flinched. The members of the whole herd went on grazing or stared imperturbably at the phenomenon. It was a new thing no doubt for them to see—but they had already been told of it. Every spring the first passing of the steamers is in this way regarded by a fresh generation on the common with complete indifference. The experience acquired by its forefathers ten or twelve years ago seems to be now added to the knowledge of every calf, born in any corner of our province. And yet, in what way have these calves been educated? or, if this fact has been taught to them at all what else may they not know?—*Dickens' Household Words.*

## The Agriculturist.

TORONTO, DECEMBER, 1853.

### TO OUR SUBSCRIBERS.

The present number completes our annual volume for 1853, and for the support which has been extended to it, we beg our subscribers and correspondents to accept our grateful acknowledgments.

It will continue to be the aim of the *Agriculturist* to assort and register the more important and interesting facts and improvements in relation to general Agriculture, more especially as they bear upon the present state and future prospects of Canada. The reports of Agricultural Societies and Farmers' Clubs, will continue to receive our best attention, and our readers may confidently reckon upon having in the pages of the *Agriculturist*, in a condensed form, whatever occurs from time to time, that is generally interesting and instructive. We shall study for

the future to procure shorter articles, and of greater variety, for each monthly issue. As the Board of Agriculture intend incorporating Prize Essays and Reports, of which they are in possession, with their own Transactions and Annual Report, and to lay the whole before Parliament at its next Session, we shall not overload our pages with heavy matter, such as generally characterizes more or less, productions of the above description. We shall be able, however, to lay before our readers sufficient information on all matters of immediate interest, pertaining to the Board of Agriculture; so that whatever is novel or of pressing importance, with which it is desirable individuals or Societies should be made early acquainted, will be certain to find a place in our pages.

As it is our desire to make the *Agriculturist* a still more general and efficient medium of communication between individuals and Societies interested in agricultural pursuits, than it has hitherto been, we earnestly solicit contributions for its pages, from all whose reading, observation, or experience, enables them to impart useful information, or to offer such suggestions as may aid the realization of the important objects, which our humble periodical seeks to promote.—Few things would tend more to advance the solid improvement of our rural population, than the practice among farmers of reducing to writing, the knowledge which they have obtained as the result of observation and experience, for the consideration and benefit of others.

Arrangements have been made, or are in progress, for improving the *Agriculturist*, both as relates to matter and the mechanical execution, during the next year. Valuable assistance has been procured in the Editorial department, and such an increase in the number of subscribers is anticipated as will enable and justify the proprietors in incurring an additional expense in obtaining cuts, and therefore better to illustrate the work.

The full realization of these objects, must, it is obvious, depend in no small degree on the support which the paper may continue to receive from the public. Two thousand additional subscribers would afford us the means of carrying



into effect what we feel to be needed, and so ardently desire. And after all such an addition to our subscription list, in a country so prosperous and expanding as Upper Canada, could be rapidly accomplished, if Agricultural Societies, and enterprising and patriotic individuals, would only take up the question in earnest. When it is considered that the "Agriculturist" is supplied to Clubs and Societies at the very small charge of *half a dollar per annum*, that it is the only periodical in Upper Canada, exclusively devoted to the Agricultural interest, surely a little extra exertion by the friends of rural improvement in different parts of the country, would easily secure the object to which reference has been made.

#### IMPORTANT TO AGRICULTURAL SOCIETIES.

As the period for holding the Annual Meetings of the Agricultural Societies is approaching, it may be useful to offer a few timely hints to the managers of these useful and important organizations; particularly as a considerable number of new Societies were formed at the commencement of the present year.

We would strongly recommend the office-bearers to read carefully the Agricultural Act—16 Victoria, Cap. 11—where they will find all that is now legally in force relative to the whole of our existing Agricultural institutions, comprising the Bureau, the two Boards and the Societies, both county and township, of each section of the united Province.

The Act requires all Township Societies to hold their annual meetings sometime during the month of *January*, for the adoption of Reports, the election of officers, &c. Each Township Society is required to send a copy of its report to the Secretary of the Society of the county in which such township is situated, in time for the annual meeting of the county society; which, according to the Act, should take place some time in the month of *February*. Sections 30, 31 and 32, set forth the duties of the officers of county societies; among them may be here mentioned that of transmitting to the Board of Agriculture, with their own report, those of the townships, with such remarks thereon as may appear necessary or desirable. *The reports of*

*all Societies must be sent to the Board, in Toronto, by the 1st of April next. Societies neglecting to comply with these and other conditions required by the Act, will forfeit all claim to any portion of the Government grant.* We urge therefore upon all Secretaries and Treasurers of Agricultural Societies, the importance of having their reports timely and properly prepared, that no delays, or any kind of irregularity may occur, so that both the letter and spirit of the law may be strictly fulfilled.

We would remind such as are entrusted with the drawing up of reports, of the desirableness of stating, in addition to the usual items of income and expenditure, whatever has occurred during the year, within their respective spheres of operation, that may possess an agricultural or economical interest. It is particularly important that whatever progress has been made in live stock, grains and grasses, implements and modes of cultivation, manures, &c., should be fully sketched; or if,—as we trust in no part of Canada is the case—a stationary or retrograding state of things exists, the fact should be frankly acknowledged, the remedies faithfully pointed out, and their immediate application urgently enforced. We believe that our Canadian agriculture—using the term in its widest acceptation—is steadily, and in some localities, *rapidly advancing*; the prices of all kinds of produce are now highly remunerating; the means of transit constantly increasing and improving; and the public is certainly entitled to anticipate that the forthcoming agricultural reports will do justice to the great interest on which the continued prosperity of the country in the main depends, and that they will embody such an array of facts as to convince the most sceptical that the future of Canada is—provided we be faithful to duty—full of hope and blessing.

The members of each *County Society*, at their annual meeting in February next, will have to nominate four fit and proper persons to be members of the Board of Agriculture, in the place of the four retiring members, and to transmit the names of the persons nominated to the BUREAU OF AGRICULTURE, at Quebec, [*vid.* Section 12 of Agricultural Act.]

The following members of the present Board will retire, unless re-elected:—Messrs. E. W. Thomson, York; R. L. Denison, Toronto; Sheriff Ruttan, Cobourg; and John Harland, Guelph.

#### AGRICULTURAL IMPLEMENTS.

##### THE DOG CHURN.

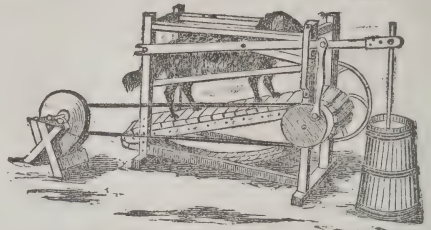
It is very encouraging to those who have laboured to introduce improvements into Canadian Agriculture, to witness the very general desire now manifested by farmers of every class to avail themselves of these improvements as fast as their means will allow. Not only do our Annual Shows give evidence of such a feeling and of its progressive increase, but in every town and village in the country, manufactories are springing up to furnish the farmer new and improved implements. A few years ago the common wheel-right and the common blacksmith were able by their united skill to supply the entire demand of the Province. But their coarse and heavy productions will not answer now. Mechanical ingenuity has found out many inventions to expedite and lighten the labours of the tiller of the soil. It is gratifying to know that he is every day finding out their utility and adopting them.

The domestic labours of the "good wife" have also been rendered much less toilsome than formerly. The operations of washing, churning, milking, and *rocking the cradle* are now disposed of by machinery! Manual labour seems to be going out of fashion altogether. All this shows, not the "wisdom of our ancestors," but our own, yet much as we may think of our own attainments, we doubt not our immediate descendants will employ the natural forces in a thousand operations that we have not dreamed of.

The following is a most useful little contrivance in very general use among the farmers of New York, and we have been surprised to find it in so few farm houses in Canada. The butter-maker has been bored with all sorts of new fangled churns for the last few years, but we believe the old-fashioned *dash* has, notwithstanding its laborious up-and-down motion, kept its ground against all competitors. Now, with a dog, or sheep power, like the following, which any ingenious farmer could make for himself in a few winter evenings, the dash churn is really without a rival. This power may also be applied to the grindstone to the infinite satisfaction of "the boys."

They are sold by American manufacturers for about \$12. The cut sufficiently explains the principle.

DOG POWER.



#### COMMUNICATION.

##### CANADIAN FARMING.

Cayuga, Oct. 11th, 1853.

DEAR SIR:—I believe there are many highly respectable, sound, practical agricultural men in some parts of this fine country, although I have not the honour of knowing them, but as I have been an agricultural and horticultural man at heart, for more than half a century (without going to a chymist to learn, as I never knew one who studied either yet,) I think I may talk and even write about horses, cows, sows, ploughs and harrows, as Bloomfield has it. Agricultural men used to talk about the good points of horses, cows, oxen, &c., and as I have had in my time near one hundred of the former, and several hundreds of the latter, I beg leave to say a little about them, particularly as a *fair profit* (which we are all entitled to) now requires great care and attention to be obtained in these times when we are called upon to compete with the labor and machinery of the whole world in every production. Our Canadian horses are able to do farm work that *ought to be required of them*—as the work of a well and regularly cultivated farm, need not be made so hard as it was before the use of real labor-saving, profitable machinery and implements were in use, (Hussey's Reaper cuts 110 sheaves in five minutes)—although they are not so strong as the Suffolk-punch, as they are called, as *they* have good points and are very strong, they have a well formed head, neck and shoulders, wide in the chest with short clean legs, short in the back and wide over the loins and hips, with good eyes and hardy constitution, many of dark chesnut and bay colors. They are far superior to the Yorkshire, Lincolnshire and Flanders horses, as the latter could not stand this climate so well as the Quebec and Montreal



horses do. Oxen of the medium size (polled) seem to answer very well for all purposes, *and yield the most profit for the low keep of this country*, and are generally very quiet to every thing around them. Cows are an excellent stock but require much more attention than is usually given here to have them *good*, as they; are often raised and kept *indiscriminately*. As all your readers may not know the good points of what is called a good cow in England, the following may very generally be depended upon, viz.: rather a thin head with a placid countenance, as a sign of good temper, thin in the neck, and not too wide in breast and shoulder points, with little dewlap, short legs and wider behind not too full along the chine, the udder should be quite large, round and full, (with milk veins or vessels *protruding*,) yet thin skinned, but *not hanging too far behind*, the teats should stand square, all pointing out at equal distances and of the same size, not *very* large towards the udder, but long and tapering to a point; such *will pay well according to what they eat*, whether great or small, (but I have not seen Durham cows have these points,) I think that, although we have not the Holderness cows, nor the pasture of Yorkshire or the Netherlands here, there should be a *prize given to the dairy man or woman who makes the most good butter or cheese* from a cow, in the months of May, June and July, as the Canadian pasture is fair then; the owners to state what they have cost to keep through the winter. I do not mean that they are to be fed with new hay, bran and shorts, as some have been doing here this summer, as I think it paying too dear for butter, like giving an additional three tons of hay, &c., to a cow in winter. I think a good parcel of cows if well managed and kept as near as possible to calving time in April, May, or not later than June, would give *more profit* than growing grain. I find here several cows of the common hardy kind, *in common pasture*, have produced from seven to nine pounds of good butter per week, and with a little care in selecting the calves to be reared, probably ten to thirteen pounds per week might be made, as in 1828 to 1834, I had one that made seventeen pounds per week, giving three large pails of milk per day for some time after calving. I think she was a Holderness cow, but our Suffolk home-bred cows justly stood very high, they paid well for their keep; I think many good ones might be had here considering the climate and keep of the country; and oxen for the yoke, and good beef also, without fancy prices, as farmers cannot afford to pay them.

Some of our farmers make me think of a sailor on horseback, who rides until the horse can go no further and then he stops; and they sow wheat on the same land so often, that it will

grow no more, and then stop, until they can get some fresh or new land. I have not seen a farm, well cultivated, in Canada, yet, nor a good plough or other implements to do it with. If I am not taking up too much of your valuable time, I beg to say a few words upon this subject. Since the true mechanical principle of the plough has been departed from, I believe there have been few or none made here, but it is said they are to be superseded by a steam digging machine, but it never can be done effectually, I believe; I have had many good ones and good scarifiers also, which nearly doubled my crops; as for spring crops, I had not an acre of clay land ploughed in the spring, in England, since 1799. I think the land was ploughed in the fall, sown and scarified in, or drilled and harrowed; and out of 3000 acres thus done, I am not aware that I ever lost half an acre. It does well here. To me it seems odd, that farmers here, instead of pulverizing and fertilizing their land to obtain an *immediate crop*, should plough up a good deep furrow, nearly half of which is sterile clay, which takes from seven to ten years to fertilize, this is the worst of theory, as it doubles the labor, encourages weeds, by burying their seeds, and spoil their crops, thus losing thousands of dollars. It is not necessary to plough the land more *than twice*, and *scarify it three times*, (no great cost) with or without a few loads of dung or lime to get a good crop of fall wheat, except where the land is worn down. General Beetson used the scarifier and harrow *only*, except drawing furrows two or three yards apart, to convey superfluous surface-water off, and added 100 sheaves to the acre of wheat, and increased all other grain. I this summer took some clay from a furrow ploughed nine and ten inches deep; beat it fine, put it into some garden pots, and raised six plants in each pot, which produced as follows, viz., six oat plants sixty-one kernels; six more thirty kernels; six of barley fifty-five kernels; six of club-wheat fifty kernels; six of peas *five kernels*; these plants were regularly watered, the straw was a little mildewed and the grain thin; the food of the plants seemed to lay in the first four or five inches of earth, and it is not necessary to plough the land deeper than six inches for any kind of plant that I know of; it is the horizontal roots that support all plants with good food—not the perpendicular ones; it was proved near eighty years ago, that an oak tree trained with horizontal roots, grew as large in eighteen years, as others near it, with perpendicular or tap-roots, grew in forty-five years; and I once trenched a piece of ground, twenty inches deep, and planted it with acorns, which produced but little. While the Frenchman makes a field a common fallow; sows it with wheat and acorns, reaps off a good crop of wheat

just above the oak plants, shuts up the field, and in five years has a better oak plantation than I had in fifteen years. In Jersey and Guernsey they plant their fruit trees *on the top of the ground* and grow the finest fruit; and a common carnation grower takes four bushels of rotten manure, three bushels of good *surface loam* and one bushel of coarse sand; mixes them well together, and grows the most splendid flowers; but no clay is used for horticultural purposes that I am aware of, I never used any; and no grain farm requires more than fifty to sixty per cent of clay; thirty per cent of good sandy soil; ten of lime particles, with four to ten of vegetable matter. I would not have a farm with eighty to ninety per cent of clay; it would not meet the labor, dilapidations, sinking value of some live stock, and all dead stock, such as implements, &c., not omitting fences, and bad seasons, even with the greatest care.

I am glad to see your correspondent, Hedger and Ditcher, desirous of getting up his fences, but although I have had many miles of ditches done on this kind of land, five feet wide by four feet deep, it would not do in this country; nor is it *necessary*, for it is said that drought does more harm here than all the rain that *falls upon the land*. This is not the wet climate of England, (in this country, where a broad deep furrow is ploughed, and consequently the stitch laid high with a deep furrow, the land wants a *heavy shower every week* to produce little more than half a crop.) A ditch three feet wide and two feet deep, would do well to begin with; the white thorn plants to be laid in the first, spade over the best earth, which ought to be set seven or eight inches back, as the intense frost would run it down before the quick had taken root; a *young tree plant, every two rods will do*, it is a slow process; the white thorn berries should be gathered as soon as ripe, and laid *six inches thick*, if thicker they would *heat*, in a shallow pit of sand, for one year, to rot the pulp off; then take them out and sow them in rows twelve or fifteen inches apart, on some good nursery or garden ground, and some at two years' old will be fit to plant out into the fences. But here are no bushes to protect them, which they require the first few years; or sheep and cattle would eat them down. A good thorn hedge, with a moderate-sized ditch to every field, ought to be had, the same as in England, with a pond of water; as all cattle, sheep and pigs must be kept in with fences, or they may be killed by railroad cars, as has already been the case.

I am glad to see the improvement that has taken place in sheep and pigs. Leicester and Southdown sheep suit this climate best, and they produce good wool and good mutton; they are better to keep than the alpaca sheep of South

America, or even the Buffalo with his good beef, and African sheep, which I have seen running in gentlemen's parks in England. I am an advocate for all hardy cattle and hardy plants, as you know, Mr. Editor, that *the best agricultural countries* do not lay in or very near the *tropics*. I observe in my last note you omitted the words *they left*, after a little hay and straw, which the older horned bulls would not eat; I think still, that this animal (*a North Wales polled bull*) whose sire was sold a year-old calf at Niagara, for fifty-five dollars, about ten years ago, when cattle were selling cheap, as a *profitable kind of animal* for this climate, would not be sneered at even by a fancy Durham breeder; they always paid me better than any other for their keep, (they girth pretty well) and this should be a great object with those who raise cattle for any purpose. Every man has his fancy or opinion, but I never knew theory give much profit; I have known it lose thousands of pounds. As this land requires good dressing, I think the Rhomboidal harrow, three or four inches in the set, covering ten or eleven feet, to harrow a stitch nine feet wide, with the horses in the furrows the most effective that are used; a light set of seven harrows will do well on softer lands. As I am desirous of seeing my neighbors flourish in their honorable calling, I have written these lines, and if any one profit by perusing and practicing my old plans herein contained, I shall feel highly gratified, as their balance-sheet will bear looking at almost as well as that of Tiptree Hall, probably.

I remain, Dear Sir,  
yours very faithfully,  
ROBERT F. COOKE.

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## MISCELLANEOUS.

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### HARD WATER.

What waters are pure—From whence natural hard water is produced—The cause—The philosophy of cleansing—Its effects—Error in the use of lime—Its benefits and virtues.

None of the waters produced by nature are entirely pure and soft; artificially distilled water alone is so, and often then, without care and some chemical knowledge of the process, it is not free from impurities.

The waters from primitive formations, particularly from mountainous districts, are almost pure, and springs and wells on sandy plains are nearly—owing to the rocks and soils being wholly composed of silicious and other constituents—insoluble in water. All streams and springs in secondary, or limestone countries, contain more or less materials constituting what is called *hard water*, and often the waters from sudden showers, which have been produced by evaporation from extensive regions of like formation, are sensibly affected.



All waters known as hard, result from some of the acids or their salts being held in solution. The most common are the carbonic acid and the carbonates, and sulphurous and chloric acids and their combinations. All the waters containing carbonic acid gas, and sulphurated hydrogen (the material that makes the sulphur springs of the country), uncombined with the earths, are rendered soft by simple boiling, as the gases are expanded by heat and thrown off, and no deposit is left; but when united with lime, alumina (clay) or the metals, boiling deposits a portion by releasing the solvent, in the form of a hard, stony concretion.

The process used by washing-women to *cleanse* the hard water, by adding lye, ashes, or potash, is a strictly correct chemical process. Acids and alkalies are antagonistical principles; one destroys or neutralizes the other, and renders both inert and harmless. The sulphurated waters are more difficult to cleanse, or purify, than any other class, except the muriates (acid of common salt, now called chlorates), as they adhere to their combinations with greater tenacity.

The effect produced on hard water in washing, where soap is used, is very simple when investigated. Soap is a compound of an alkali and animal fat, or vegetable oils and resins, and when added to water containing any acid, or acidulated substance, the acid, by its chemical affinities, seizes and neutralizes the alkali of the soap, disengaging the fatty substance in the same shape it was originally, and in the worst possible for cleansing the person or clothing.

There is a vulgar error prevailing among the people generally, that it is dangerous to add lime to wells and cisterns, on account of its rendering the water *hard*. There is no greater fallacy among our traditional beliefs. Lime is strictly an alkaline substance, and as such, is a neutralizer of all the acids which water contains, and may be freely used when in a *quick* or unslacked state; old and airslacked is hurtful, as it has become a sub-carbonate. One ounce of fresh quick lime, dissolved in water, will soften two barrels of ordinary hard water, and render it fit for washing purposes. It is also advantageously used to sweeten cistern water when it becomes stagnant, and of bad color, and the cheapest and most ready deodorizer of all unpleasant, unhealthy effluvia.—*Rural New-Yorker*.

#### MOTION OF SAP IN TREES.

What a curious hallucination is that which supposes the sap of trees to fall or settle in the winter into the roots! One would have thought that the notorious difficulty of cramming a quart of water into a pint measure might have suggested the improbability of such a phenomenon. For it certainly does require a very large amount of credulity to believe that the fluids of the trunk and head of a tree, can, by any natural force of compression, be compelled to enter so narrow a lodging at the roots.

We shall assume the word sap to signify the fluids, of whatever nature, which are contained in the interior of a tree. In the spring the sap runs out of the trunk when it is wounded; in the

summer, autumn and winter, it does not, unless exceptionally make its appearance. But in truth the sap is always in motion at all seasons and under all circumstances, except in the presence of intense cold. The difference is that there is a great deal of it in spring and much less at other seasons.

When a tree falls to rest at the approach of winter, its leaves have carried so much more fluid than the roots have been able to supply, that the whole of the interior is in a state of comparative dryness, and a large portion of that sap which once was fluid, has become solid in consequence of the various chemical changes it has undergone. Between simple evaporation on the one hand, and chemical solidification on the other, the sap is, in the autumn, so much diminished in quantity as to be no longer discoverable by mere incisions. The power that a plant may possess of resisting cold, is in proportion to the completeness of this drying process.

When the leaves have fallen off, the tree is no longer subject to much loss of fluid by perspiration, nor to extensive changes by assimilation. But the absorbing power of the roots is not arrested; they, on the contrary, go on sucking fluid from the soil, and driving it upward through the system. The effect of this is, that after some months of such an action, that loss of fluid which the tree has sustained in autumn by its leaves is made good, and the whole plant is distended with watery particles. This is a most wise provision, in order to insure abundance of sap for the new born leaves and branches, when spring and sunshine stimulate them into growth.

During all the winter period the sap seems to be at rest, for the re-filling process is a gradual one. But M. Biot many years ago, proved by an ingenious apparatus, that the rate of motion of the sap, may be measured at all seasons, and he ascertained it to be in a state of inactivity in mid-winter. Among other things he found that frost had considerable influence upon the direction in which the sap moves. In mild weather the sap was constantly rising, but when frost was experienced the sap flowed back again—a phenomenon which he referred to the contracting power of cold on the vessels of the trunk and branches, the effect of which was to force the sap downward into the roots, lying in a warmer medium; then, again, when the frost reached the roots themselves and began acting on them, the sap was forced back into the trunk, but as soon as the thaw came and the ground recovered its heat, the roots out of which a part of the sap had been forced upwards, were again filled by the fluids above them, and the sap was forced to fall. A large poplar tree in the latter state, having been cut across at the ground line, the surface of the stump was found to be dry, but the trunk itself dripped with sap. Sap, then, is always in motion, and if it ever settles to the root in a visible manner, that is owing to temporary causes, the removal of which causes its instant re-ascent.

As to the idea that the bleeding of a tree begins first at the root, and in connection with this supposition, that what is called the rise of the sap is the cause of the expansion of buds and leaves and branches, nothing can well be more destitute of

any real foundation. If in the spring when the buds are just swelling, a tree is cut at the ground line, no bleeding will take place, neither will the sap flow for some distance upwards, but among the branches the bleeding will be found to have commenced. This was observed some years ago by Mr. Thompson, at that time the Duke of Portland's gardener, who thought that he had discovered that the sap of trees descends in the spring, instead of ascending; a strange speculation enough it must be confessed. The fact is, that the sap is driven into accelerated motion first at the extremities of a tree, because it is there that light and warmth first tell upon the excitable buds. The moment the buds are excited they begin to suck sap from the parts with which they are in contact; to supply the waste so produced, the adjacent sap pushes upwards; as the expansion of the leaves proceeds, the demand upon the sap near them becomes greater; a quicker motion still is necessary on the part of the sap to make good the loss; and thus from above downward is that perceptible flow of the fluid of trees, which we call bleeding, affected.

The well known fact of trees sprouting in the spring, although felled in the autumn, proves that the sap had not at that time quitted the trunk to take refuge in the roots. Such a common occurrence should put people on their guard against falling into the vulgar errors on this subject.—*Professor Lindsey.*

#### MEMORY QUICKENED IN DROWNING.

The following circumstance, vouched for as true, is one among many instances in which the memory has received a remarkable quickening in apparent drowning. Such facts are incontestible; the solution has never been satisfactorily given:—

"Some years since, A held a bond of B for several hundred dollars, having some time to run. At its maturity he found that he had put it away so carefully that he was unable to find it. Every search was fruitless. He only knew that it had not been paid or traded away. In this dilemma, he called on B, relating the circumstance of its disappearance, and proposed a receipt as an offset to the bond, or rather an indemnifying bond against its collection if ever found. To his great surprise, B not only refused to meet the terms of difficulty, but positively denied owing him anything, and strongly intimated the presence of a fraudulent design on the part of A. Without legal proof, and therefore without redress, he had to endure both the loss of his money and the suspicion of a dishonorable intention in urging the claim. Several years passed away without any change in the nature of the case, or its facts, as above given, when one afternoon, while bathing in James River, A, either from inability to swim or cramp, or some other cause, was discovered to be drowning. He had sunk and risen several times, and was floating away under the water, when he was seized and drawn to the shore.—The usual remedies were applied to resuscitate him and although there were signs of life, there was no appearance of consciousness. He was taken home in a complete state of exhaustion, and remained so for some days. On the first re-

turn of strength to walk, he left his bed, went to his book case, took out a book, opened it and handed his long lost bond to a friend who was present. He then informed him that when drowning and sinking, as he supposed, to rise no more, in a moment, there stood out distinctly before his mind, as a picture, every act of his life, from the hour of childhood to the hour of sinking beneath the water, and among them the circumstance of his putting the bond in the book; the book itself and the place in which he had put it in the book case. It is needless to say that he recovered his own with usury. There is no doubt that this remarkable quickening of memory results from the process which in such cases is going on—the extinguishment of life. It is somewhat analogous to the breaking in of the light of another world, which in so many well attested cases of death-bed scenes, enables the departing spirit, even before it has absolutely left its clay tenement, to behold and exult in the glories of the future state. Is it not a fair inference, that when the soul shakes off the clogs and incumbrances of the body, it will possess capacities for enjoyment of which on earth it was unsusceptible? As regards the memory, it will be observed by most persons, how readily in life we forget that which we do not desire to remember, and in this way we get rid of much unhappiness. *Can we do this after death?—This is an important practical question..—Cist's Adv.*

#### CONDITION OF HUMBLEST CLASS OF LABORERS.

As things now stand it cannot be doubted that the daily corporeal labor which is the lot of this class of men supplies that kind of occupation which is consequently more productive of happiness than any other would. I even question if the diminution of the period of daily labour, when excessive as in many cases it doubtless is, would add to their happiness. Unable for the most part to read books of instruction or amusement with understanding or profit; ignorant of all the sciences even in their very rudiments; uninstructed in any art that has relation to the higher faculties with the imagination and the fancy, and all the other ministers of taste unawakened from their sleep; unacquainted even with most of the little arts having relation to their domestic state; nay, unskilled in the very games which might innocently fill up a vacant hour—what could they do with more leisure? Alas, I fear we have an answer in what we all see around us in the proceedings which too generally characterise the haunts most frequented by them in the intervals of their weekly labour by day; in the evenings; and even in their Sundays and other holidays! Is such a state of things as this to last forever? Is it even to last long? I believe not; certainly not long, according to the measure by which we mete out the time in relation to momentous changes in man's condition on earth; once fairly assailed it must gradually vanish before that progress which has never yet ceased, in some degree or other, to animate and advance the race, and material bodies in motion, will gain force as it proceeds. When the period arrives, labor will then take its just place and degree among the acknowledged elements of



happiness; and the business of the world will be carried on, even in the lowest forms, not by unthinking, unreasoning, unenjoying machines in human form, but by man worthy of the name, men with minds as capable of labor as their bodies, and having the means and opportunity of exercising the one as well as the other in that active, earnest, but *temperate* manner which seems to have been ordained as the best manner for man in all his relations. The means whereby this happy change is to be brought about, as far as our feeble power can foresee, seem to lie mainly in the general cultivation of men's minds—in other words, in the imparting of knowledge to all those capable of receiving it.—*From a Lecture on Happiness in its Relations to Work and Knowledge.*—By John Forbes, M.D.

#### THE CHURCHYARD BEETLE.

*Fraser's Magazine* has lately contained a number of very interesting papers called "Episodes of Insect Life," from the last published one of which we make an extract, as follows:—

"A German, named Gleditsch, who had laid some dead moles upon the beds in his garden, whether as examples of retributive justice for their defacement of his borders and walks, or for other good reasons, or for none at all, does not appear, observed that the bodies of the little gentlemen in velvet disappeared mysteriously. He watched, and found that the agents were beetles, which having first deposited their eggs in the carcasses that were to be the provision for their larvæ, buried the bodies, so that they might be safe from predatory birds and quadrupeds. Into a glass vessel he put four of these insects, having filled it with earth, on the surface of which he placed two dead frogs. His sextons went to work, and one frog was interred in less than twelve hours—the other one on the third day. Then he introduced a dead linnet. The beetles soon began their labors, commencing operations by removing the earth from under the body, so as to form a cavity for its reception. Male and female got under the corpse, and pulled away at the feathers to lower it into its grave. A change then came over the spirit of the male, for he drove the female away, and worked by himself for five hours at a stretch. He lifted the body, changed its position, turned and arranged it, coming out of the hole, mounting on the dead bird, trampling on it, and then again going below to draw it down deeper still. Wearied with his incessant efforts, he came out and laid his head upon the earth beside the object of his labors, remaining motionless for a full hour, as if for a good rest. Then he crept under the earth again. On the morning of the next day, the bird was an inch and a half below the surface of the ground, but the trench remained open, the body looking as if laid out upon a bier, surrounded by a rampart of mould.

When evening came, it had sunk half an inch lower. The next day the burial was completed, the bird having been completely covered. More corpses were now supplied, and in fifty days twelve bodies were interred by the four beetles in this cemetery under a glass case."

#### COWS HOLDING UP THEIR MILK.

It is well known that many cows when they come in, when their calves are taken from them, will hold up their milk, sometimes to such a degree is almost to dry themselves before they will give it down.

"A few years ago," writes a correspondent of an English newspaper, "I bought a young cow which proved to be very wild, and when I took her first calf she would not give her milk. I had heard it remarked that putting a weight on the cow's back would make her give her milk down. I accordingly drove her into a stable, got a bushel of grain and put it on her back. While in this position, she had no power to hold up her milk, for it came down freely. After doing this a few times, and afterwards putting my hand on the back of the cow, it would give way and she would immediately give down her milk. The rationale of this treatment appears to be that the weight counteracts the upward tendency of the animal's muscular action.

#### THE SOAP PLANT.

From a paper read before the Boston Society of Natural History, it appears that the soap plant grows all over California. The leaves make their appearance about the middle of November, or about six weeks after the rainy season has fully set in; the plants never grow more than a foot high, and the leaves and stock drop entirely off in May, though the bulbs remain in the ground all summer without decaying. It is used to wash with, in all parts of the country, and by those who know its virtues, it is preferred to the best of soap. The method of using it is merely to strip off the husk, dip the clothes into the water, and rub the bulb on them. It makes a thick lather, and smells not unlike brown soap. The botanical name of the plant is *Phalangium pomaridianum*. Besides this plant, the bark of a tree is also used in South America, for the purpose of washing. Several other plants have been used in different countries as a substitute for soap.

#### AFRICA.

We find by a series of levellings recently carried across the Isthmus of Suez, that instead of there being a difference of thirty feet between the level of the Red Sea and that of the Mediterranean, as has so long been believed, there is in reality little or none—an interesting fact, which will be still further verified during the progress of the railway works to be set on foot in that locality under the superintendence of Mr. R. Stephenson.—How the past and present will be brought together by having light thrown on ancient geography by modern enterprise! Besides this, an attempt is being made to solve another important problem in the Valley of the Nile. Lepsius has stated in his great work on Egypt, that this river formerly flowed at a much higher level than now, having in the course of ages worn away its bed to a depth of twenty-seven feet; and this statement being disputed, a deep pit or well is to be sunk at Heliopolis, with a view to examine the strata and deposits through which it flows, and thereby determine if any and what change has

taken place. The work for this purpose is under the direction of Mr. Leonard Horner, who defrays the cost with a portion of the annual grant placed by government at the disposal of the Royal Society, which has lately received a consignment of cases filled with specimens of the earth taken from the excavation. Meanwhile it appears that, like Sweden, the Arabian Gulf region and Abyssinia are undergoing slow and gradual upheaval. In addition to these researches, active explorations are going on in the north, east, west, and south of Africa, and more than one treaty of commerce has been signed between England and the petty monarchs of the interior. The Rev. Mr. Livingston announces the existence of another large lake, 200 miles northwest of that now known as Ngami; the great lake Tchad is being navigated by European boats; and efforts are being made to reach those mysterious mountains in which the Nile is supposed to rise, for, as Captain Smyth observes, "no European traveller, from Bruce downwards, has yet seen its true source."—*Chambers' Journal*.

#### FRUIT TREES.

**PRUNING.**—The practice commonly pursued is to plant a tree, and let it grow in its own way. The consequence is, that it runs up to a long naked stem, with two or three naked limbs, having a few weak branches at the top. In order to obtain a well-formed tree, cut it down after planting to within two feet of the ground, with a sloping cut close to a bud. In this space there will be many buds which will send out shoots. When the shoots make their appearance, rub them all out but three. Leave the top one, and one on each side, not directly opposite each other, at a suitable distance. These will form limbs. The next year shorten the upright shoots that come out of the top bud, so as to produce other horizontal branches, in a different direction from those produced last year. In this way the tree will assume a spreading form. The aspiring shoots must be kept down, and some of the weak ones cut out as well as all dead ones, that the tree may not be overburthened with wood. If the tree get thin of branches near the trunk, cut some of the limbs back,—these will send out shoots, and fill up the naked space. The lowest limb should proceed from the trunk, at not more than fifteen inches from the ground. Large limbs should not be cut off unless absolutely necessary; they should always be pruned when small—less injury will then be done to the tree.

#### LOVE OE READING.

**THE LOVE OF READING EMANCIPATES US FROM THE DOMINION OF THE PASSIONS.**—When the intellect is not cultivated, the power of the passions is likely to prevail. They who cannot enjoy the pleasures of mind will naturally seek the gratification of the senses. They who can never spend time in the acquirement of knowledge and of delight from books, will commonly be disposed to give the leisure which they can spare from the bodily toils of life to those means of amusement and kinds of indulgence which have a tendency to corrupt the heart and debase the character. They who have little knowledge of moral duty, and of the physical evils of which many of its violations are productive, and who come into contact with but few of the mo-

tives which prompt to the cultivation of virtuous habits, can only be expected to become the slaves of vice. Where the range of desire and enjoyment is limited, and is confined almost entirely within the sphere of animal appetite and passion, and where pleasure depends chiefly, if not wholly, on companionship and personal intercourse with others, it is scarcely possible to escape from intemperance and impurity, and from the contaminating influence of evil example. But it is otherwise when the mind has been instructed and trained by reading. He who loves the good and useful book has within his reach, at all times, mental, moral, and religious enjoyments which, by occupying his hours of leisure and contributing to his happiness, preserve him from multitudes of temptations to immorality. He can sit down at his own table, and by his own hearth, and have his interest there awakened, his thoughts excited, his curiosity gratified, and his joys increased. He can look there upon mental pictures and scenes of beauty, which the bodily eye can never behold, listen to mental voices and conversations which the bodily senses can never experience. He may be alone and surrounded with little that is attractive; but he can fill his mind with ideas of grandeur and loveliness, and hold fellowship with multitudes of the wisest, the greatest, and the best of his fellow men. He becomes more and more acquainted with the duties which he owes to God and to his brethren of mankind, and feels with increasing force the obligations under which he lies to flee from vice, and to practise virtue. And being thus employed, the operations of evil passion are counteracted; the enticements of sinners are avoided; the taste is refined; the love of home, with its quiet and pure pleasures, is fostered; and habits of thought and restraint, of regularity and propriety, are formed and confirmed.—*A Lecture to Young Men, by Dr. McKerrow.*

#### DEATH OF THE ROBIN.

BY MRS. EMELINE SMITH.

From his sweet banquet, 'mid the perfumed clover,  
A robin soared and sang;  
Never the voice of a happy bard or lover  
Such peals of gladness rang.  
Lone Echo loitering by the distant hill-side,  
Or hiding in the glen,  
Caught up, with thirsting lip, the tide of sweetness,  
Then bade it flow again,  
The summer air was flooded with the music;  
Winds held their breath to hear;  
And blushing wild-flowers hung their heads, enamored,  
To list that "joyance clear."  
Just then, from neighboring covert rudely ringing,  
Broke forth discordant sound;  
And wily fowler from his ambush springing,  
Gazed eagerly around.  
Still upward, through the air that yet was thrilling,  
To his melodious lay,  
One instant longer, on a trembling pinion,  
The robin cleared his way.  
But, ah, the death-shot rankled in his bosom—  
His life of song is o'er!  
Back, back to earth, from out his heavenward pathway,  
He fell, to rise no more.  
A sudden silence chilled the heart of nature—  
Leaf, blossom, bird, and bee,  
Seemed each in startled hush, to mourn the pausing  
Of that sweet minstrelsy,  
And Echo, breathless, in her secret dwelling,  
Like love-lorn maid, in vain  
Waited and listened long to catch the accents  
She ne'er would hear again.  
Oh, bird! sweet poet of the summer woodlands!  
How like thy lay to those  
Of tuneful bards, whose song, begun in gladness,  
Have oft the saddest close,  
Thus many a strain of human love and rapture,  
Poured from a fond full heart,  
Hath been, in one wild moment, hushed forever,  
By sorrow's fatal dart.



## EDITORIAL NOTICES.

UNIVERSITY COLLEGE, TORONTO.

PROFESSOR BUCKLAND has commenced a Course of Lectures on SCIENTIFIC and PRACTICAL AGRICULTURE. Fee for the Course \$2. These Lectures are open to occasional Students, who can enter the class immediately or at the commencement of the New Year. A Prize of the value of £6 10s., has been offered by William Matthie, Esq., President of the Provincial Association, to the Student in the Agricultural Class, who shall pass the best examination; and a second Prize of the value of £3, is likewise offered by a member of the Board of Agriculture.

December 1st, 1853.

LIST OF HORTICULTURAL AND AGRICULTURAL BOOKS FOR SALE, BY JAMES FLEMING SEEDSMAN, TORONTO.

Gardening for Ladies. By Mrs. Loudon.....	6s. 3d.
Breck's Book of Flowers.....	3s. 9d.
Buist's Kitchen Gardener.....	3s. 9d.
Buist's Flower Garden Directory.....	6s. 3d.
Bridgeman's Young Gardener's Assistant....	7s. 6d.
Florist's Guide.....	2s. 6d.
Kitchen Gardener's Instructor.....	2s. 6d.
Fruit Cultivator's Manual.....	2s. 6d.
Downing's Fruits and Fruit Trees of America	7s. 6d.
Coles Fruit Book.....	2s. 6d.
The Gardener's Text Book. By A. Schenck..	2s. 6d.
The American Kitchen Gardener.....	1s. 3d.
The American Rose Cultivist.....	1s. 3d.
Every Lady her own Flower Gardener.....	1s. 3d.
Domestic Fowl and Ornamental Poultry....	1s. 3d.
Elements of Agricultural Chemistry and Geo-	
logy. By Professor Johnston. New Ed.	5s. 0d.
Essay on Manures. By S. L. Dana.....	1s. 3d.

Among the several excellent works in the above list, that of Professor Johnston's "Elements of Agricultural Chemistry," is deserving of the special notice of young and enquiring farmers. It is an exact reprint of the last (the 6th) English edition, and is offered at a price which places it within the reach of all. We know of nothing more important to farmers than the proper selection of a few really good books for their own and family's reading.—EDITOR.]

SCOBIE'S CANADIAN ALMANAC, AND REPOSITORY OF USEFUL KNOWLEDGE, FOR 1854. TORONTO: HUGH SCOBIE.

The eminent and deserved success which has attended this most useful and valuable publication for several years past, is a sufficient guarantee that the Almanac for 1854 will sustain the high character of its predecessors. In looking over its pages we find them crowded with matter, which every man of business must have frequent occasion to refer to; while its general and scientific information is of a kind that cannot fail to interest all classes of the community. Nearly ninety octavo pages of the exact information with which it is everybody's duty and interest to become familiar, collected and condensed at much labor and expense, together with a well executed map of a portion of the Province, for the marvellously low price of 7½d! No family ought to be without it.

THE POPULAR EDUCATOR: A. H. ARMOUR, TORONTO.

This cheap and excellent monthly serial well sustains the important position which it assumed at its commencement, and will doubtless prove a useful auxiliary to such young persons as are pursuing a course of study, unaided by a teacher, as well as to domestic and school education. The widest possible diffusion of publications of this sort, cannot fail to prove an inestimable blessing to society.

We have received the FIRST REPORT of the Secretary of the Board of Registration and Statistics, on the Census of the Canadas for 1851-52. We are indebted to Mr. Hutton, the able and indefatigable Secretary of the Board, for the above interesting Report, to some of the results of which we may hereafter refer.

### AGRICULTURAL PRIZE.

We publish with pleasure the following communication. It is gratifying to see Mr. Harrington's interest in the progress of Agriculture displayed in this tangible form. The gift is not only valuable in itself, but is beneficial as a stimulant to others to look around them to see whether they can in any way lend a helping hand to progress. In these days we stand not still, and it is well to move in an honest, upright course:

Toronto, 9th Nov., 1853.

Dear Sir,—I was much pleased with the late Fair of the Township of Etobicoke, as well with the exhibition of the products of the soil, cattle, horses, implements, &c., as with the men, whose energy, good will and ambition, were so easily seen.

As a small token of acknowledgment of such very good qualities, I will be happy to give, as a premium, one of Grey's double-mounted iron Scotch ploughs, to be competed for by farmers or their sons, in a ploughing match, to take place at the time of holding your next Fair, leaving the matter in the hands of such zealous friends of the farmer, as yourself and the other officers of the Township Society, to arrange.

I remain,

Yours very truly,

JOHN HARRINGTON.

Edward Musson, Esq.,

President of the Etobicoke Agricultural Society.

At a meeting of the Board of Directors of the Agricultural Society of the Township of Etobicoke, held at Mr. Thomas Smith's Inn, Mimico, Dundas street, on the 11th instant, it was moved and carried unanimously,

That the thanks of this Society be returned to John Harrington, Esq., of Toronto, for his very handsome present, to the said Society, of one of Grey's double-mounted iron Scotch ploughs, as a premium, to be competed for, at a ploughing match to be held the ensuing season, to be left in the hands of the present President and Directors of the Society, as they may think proper.

By order of the Board,

ALEX. CAMPBELL,

Secretary E. A. Society.

Etobicoke, 26th Nov., 1853.

## TORONTO MECHANICS' INSTITUTE

We have much pleasure in publishing the Mechanics' Institute programme of Lectures for the ensuing season. A more imposing list of Lecturers could not easily be provided. We trust that in spite of all the fascinating entertainments generally provided to beguile the long winter nights, that this course of Lectures will be well attended.

## LECTURES

To be delivered in the Hall of the Institute, during the Winter of 1853-4.

1853, Friday, Dec. 2nd—"Opening Lecture," T. J. Robertson, Esq. 9th—"The Augustan Age of English Literature," Rev. Dr. Burns. 16th—"Rev. Dr. Burns. 1854, Jan. 6th—"The connection of Natural Science with Agriculture," Professor Hincks. 13th—"Indians' Languages and Legends," Rev. A. Lillie. 20th—"Self-Education," Patrick Freeland, Esq. 27th—"The primitive state of man;—was it civilized or savage?" Thomas Henning, Esq. Feb. 3rd—"Magnetism," Rev. W. Ormiston. 10th—"Nitre, its nature and uses," Professor Croft. 17th—"On some characteristics of the Ancient and Modern Drama," Dr. Wilson. 24th—"Philosophy—falsely so called," Rev. Dr. Pyper. March 3rd—"Geology," Professor Hind. 10th—"Geology of Canada West," Professor Hind. 17th—"On the Earth's Epochs, with Paleontological Illustrations," Professor Chapman. 24th—"Ancient Bibliography," Rev. Dr. McCaul. 31st—"On Heat," Rev. Dr. Taylor. April 7th—"Concluding Lecture," Rev. Dr. Ryerson.

Tickets for the Course, 5s. For a Single Lecture, 7½d. Ladies, and members of the Institute, admitted free.

## TORONTO RETAIL MARKETS.

December 1, 1853.

Flour—Millers' extra superfine, per barrel.....	0	0	a	32	6
do Superfine do .....	0	0	a	31	3
Farmers', per 196 lbs.....	27	6	a	28	9
Wheat—Fall, per bushel, 60 lbs.....	5	3	a	5	7
Spring, per bushel, 60 lbs.....	0	0	a	0	0
Oatmeal, per barrel.....	0	0	a	35	0
Rye, per bushel, 56 lbs.....	4	0	a	4	3
Barley, per bushel, 48 lbs.....	2	0	a	3	6
Oats, per bushel 34 lbs.....	2	6	a	3	0
Peas, per bushel.....	3	6	a	4	0
Potatoes, per bushel.....	2	6	a	2	9
Apples, per bushel.....	1	6	a	2	6
Grass Seed, per bushel, 48 lbs.....	7	5	a	0	0
Clover Seed, per bushel.....	27	6	a	28	6
Hay, per ton.....	70	0	a	83	9
Straw, per ton.....	50	0	a	60	0
Onions, per bushel.....	5	0	a	7	6
Butter—Fab, per lb.....	0	8	a	0	9
Fresh, per lb.....	0	10	a	0	11
Lard, per lb.....	0	7	a	0	7½
Turkies, each.....	2	6	a	3	6
Geese, each.....	2	9	a	3	6
Ducks, per couple.....	1	6	a	1	9
Fowls, per pair.....	1	0	a	1	6
Cheese, per lb.....	0	5	a	0	0
Pork, per 100 lbs.....	22	6	a	26	3
Fresh, per lb.....	0	0	a	0	5
Beef, per 100 lbs.....	22	6	a	27	6
Beef, per lb.....	0	2½	a	0	5
Lams, per 100 lbs.....	45	0	a	60	0
Bacon, per 100 lbs.....	35	0	a	40	0
Wool, per lb.....	1	2	a	1	6
Sheepskins, fresh slaughtered.....	5	0	a	5	8
Calf-skins, fresh, per lb.....	0	0	a	0	6
Hides, per 100 lbs.....	22	6	a	25	0
Eggs, per dozen.....	0	10	a	1	0
Veal, per lb, by the quarter.....	0	3	a	0	4½
Mutton per lb, by the quarter.....	0	3	a	0	5
Coal, per ton.....	37	6	a	40	0
Firewood, per Cord.....	20	0	a	22	6

## ADVERTISEMENTS.

## BUREAU OF AGRICULTURE,

QUEBEC, 30th September, 1853.

HIS EXCELLENCY THE ADMINISTRATOR OF THE GOVERNMENT has been pleased to *revoke* the appointment, notified in the *Official Gazette* of the 28th of May, last, of

Messrs. Whitman &amp; Wheelock,

OF No. 100 FRONT STREET, NEW YORK,

As Agents for the receipt and bonding of Goods, or for the Payment of Duties on all such Goods as may be sent from Canada for the INDUSTRIAL EXHIBITION at New York, their services not being required.

Mr. ANTROBUS HOLWELL, Esq., Commissioner for Canada at the INDUSTRIAL EXHIBITION at New York, will take charge of all articles sent to the Exhibition from Canada.

## ANDRE LEROY, NURSERYMAN, ANGIERS, FRANCE,

HONORARY AND CORRESPONDING MEMBER, &c., of all the principal Agricultural Societies of Europe and America, begs to inform his friends and the Public in general that he has just published his catalogue for 1853, which is the most complete one ever made. All the prices and required information for the importation of all kinds of Trees, Shrubs, Evergreens, Stocks, Roses, &c., &c., will be found in said Catalogue, which can be had free of charge on application to the undersigned, who will receive and forward all orders and attend to receiving and forwarding of the trees ordered, on arrival here. It is useless to add that Mr. LEROY possesses the largest NURSERY on the Continent. His experience in putting up orders for America, and the superior and reliable quality of all his trees, &c., is too well established, to require any further notice. Orders should in all cases be sent to the undersigned in the fall with information when the trees are to be forwarded.

E. BOSSANGE,

138 Pearl-st., New York.

September, 1853.

3m.

## The Canadian Agriculturist,

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, to whom all communications are to be addressed, is published on the First of each month by the Proprietor, *William McDougall* at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

## TERMS.

SINGLE COPIES—One Dollar per annum.

CLUBS, or Members of Agricultural Societies ordering 25 copies or upwards—*Half a Dollar each Copy.*

Subscriptions always *in advance*, and none taken but from the commencement of each year. The vols. for 1849-'50-'51, at 5s. each, bound.

N. B.—No advertisements inserted except those having an especial reference to agriculture. Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.



















